KERNFORSCHUNGSANLAGE JÜLICH
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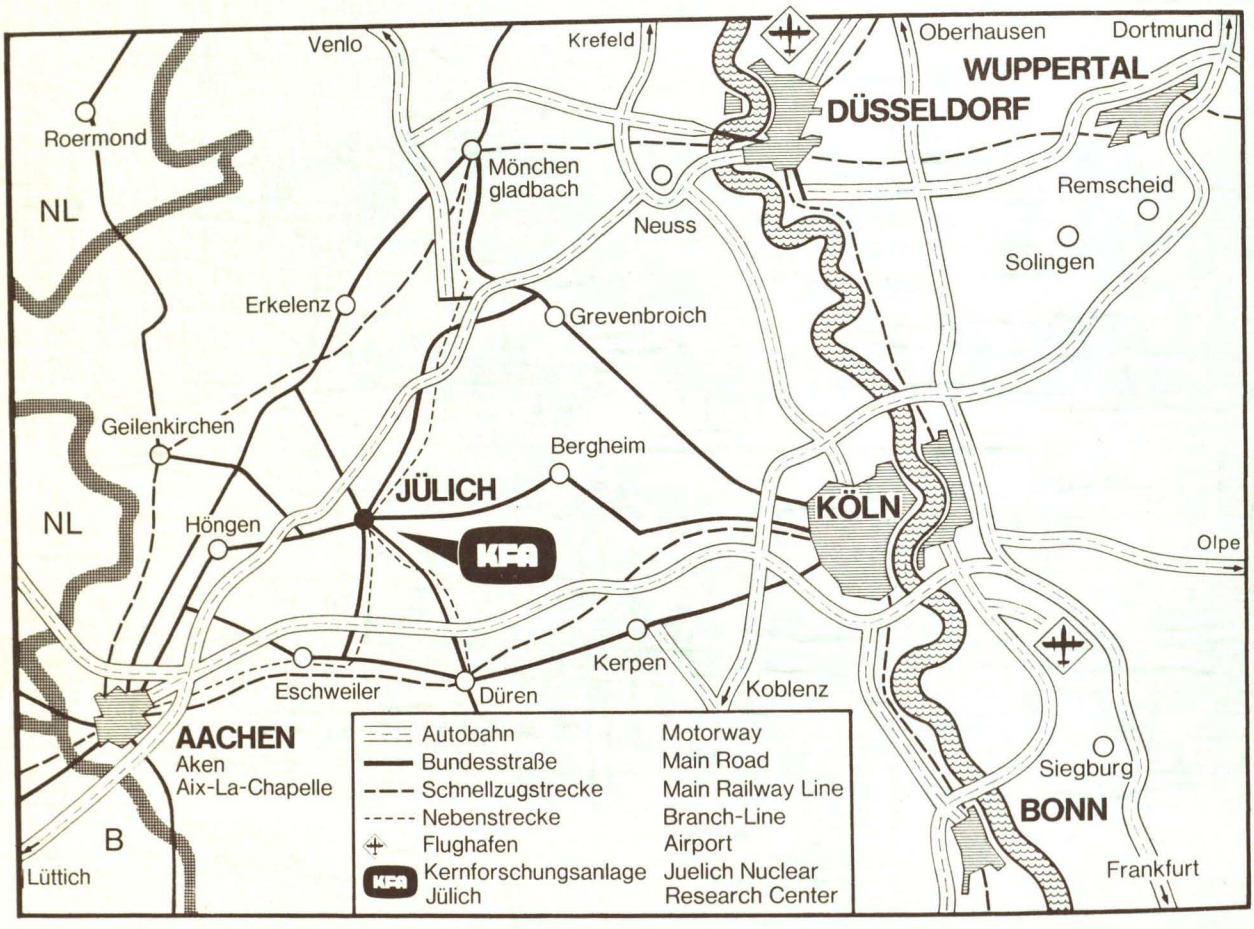
A Timesharing Benchmark on an IBM/370-168

by

R. Alexander, B. Mertens and R. D. Rumler

Jül - 1280
März 1976

Als Manuskript gedruckt



Berichte der Kernforschungsanlage Jülich – Nr. 1280

Zentralinstitut für Angewandte Mathematik Jül – 1280

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Abstract

For the preparation of a planned exchange of an IBM/370-158 CPU with an 168 CPU, a benchmark was run. Five different configurations were investigated using two types of benchmark scripts and the two timesharing operating systems, OS/VS2 Rel. 3 and TSS/370 Rel. 2. The description of the measurements and the results are presented.

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1. Introduction

Since the Kernforschungsanlage Jülich planned to exchange the IBM System 370 Model 158 CPU running under the timesharing operating system TSS/370 with a Model 168 CPU, benchmark measurements were performed by the Zentralinstitut für Angewandte Mathematik (ZAM) of KFA in coorporation with IBM. These measurements took place between August 25th and September 17th, 1975 at the World Trade System Center (WTSC) in Poughkeepsie, New York (USA). The participants were:

K. Barthelmes	(IBM)
H. Devore	(IBM)
R. Ingebrandt	(IBM)
P. Schiffeler	(IBM)
R. Alexander	(KFA)

The aim of the project was to identify the best of five 168 configurations under consideration. This had to be done for the present operating system, TSS/370, as well as for the possible successor, OS/VS2 Rel. 3 (MVS) with TSO.

The benchmark scripts used for the measurements should reflect the usage of the timesharing facilities in KFA.
This report presents the environment, the layout and the mere results of the measurements. A deeper interpretation is supposed to be published later.

2. Scope of the Measurements

Five different 168 configurations were to be investigated:
1) the "base" configuration: a model 168-1 with
   - 3 MByte of main storage
   - 16 kByte high speed buffer
   - one fixed-head storage 2305-2 ("drum") at its own BMPX channel
   - a reasonable number of disk-drives 3330 at its own BMPX channel

2) the base configuration with an additional
   - drum at same BMPX channel

3) the base configuration with an additional
   - string of disk-drives at its own BMPX channel

4) the base configuration with an additional
   - MByte of main storage (4 MByte totally)

5) the base configuration with an additional
   - drum at same BMPX channel
   - but two MByte main storage only

Two kinds of benchmark scripts were to be run for each of these configurations:

TS only: a pure timesharing script simulating 80 active terminal users

Mixed : a script simulating 40 active timesharing users and a batch job-stream. The operating systems had to be set up so that the execution time of the job-stream (first job started to last job ended) was twice the time that the batch-stream took without timesharing users. In other words: a batch degradation of approximately 100% should be achieved.

The five configurations were to be evaluated using two types of benchmark scripts and the operating systems MVS and TSS, giving a total of 20 measurements.

For each of the measurements the following results were expected:
- response times (see definition below).
  The different timesharing commands issued in the scripts were divided into three classes: trivial, non-trivial and execution commands (see Appendix A). For each class the average response time was considered to be a relevant number.

- CPU and channel utilization.
These numbers were supposed to
be gained by a hardware monitor (SMI).

3. The Structure of the Time-Sharing-Scripts

In principle all of the interactive work was performed by the same script. The master script contained four logically independent parts plus a housekeeping section. The driver script was composed of 4 combinations of the 4 independent sections. The order of the four scripts were as follows:

Script1	Script2	Script3	Script4
Housekeeping	Housekeeping	Housekeeping	Housekeeping
Data Mgmt	Editing	Comp. & Exec.	Procedures
Editing	Comp. & Exec.	Procedures	Data Mgmt
Comp. & Exec.	Procedures	Data Mgmt	Editing
Procedures	Data Mgmt	Editing	Comp. & Exec.

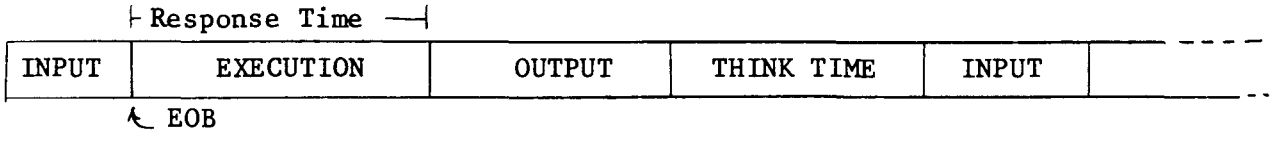
Since the command languages for TSS and TSO are different, the timesharing scripts for the TSS and the MVS benchmarks could not be identical. However the functions performed by the script are identical or at least equivalent. The TSO and TSS Scripts are attached as Appendix B.

4. The Structure of the Batch Stream

The given job stream emulates the job mix typical to the KFA. The MVS and TSS jobs are described in Appendix C. These jobs were taken five times to get an actual jobstream of 20 jobs.
They were identical for both, TSS and MVS (see Appendix C).

5. Definitions

The following is a definition of the phases of a timesharing command:



The Input Time of a command was calculated by multiplying the number of input characters by the typing speed. The Typing Speed for these runs was two characters per second. The Execution Time is to be measured as Response Time. It was measured from the time the carriage return was hit until the first character of output arrived at the terminal. The Output Time was calculated using the Typing Speed of 15 characters per second. For all runs a Think Time of 5 seconds was used.

6. Measurement Procedures

For all runs the system performance was measured during the period between the 15^{th} and the 30^{th} minute after the first timesharing user LOGON Command.
The timesharing users terminals were simulated by a /370-158 executing the Teleprocessing Network Simulator (TPNS) under VS2 Rel. 3. The '158 was connected with the '168 under investigation via two TP controlunits, 3705, and the corresponding number of communication lines. During the measurements a log-tape was written by TPNS for later evaluation.
This evaluation was done by the data reduction program RTAP1 (Response Time Analysis Program).
CPU and channel utilization was measured by a SMI hardware monitor which was started shortly after the beginning of a measurement period and stopped at its end. A certain amount of tuning was done for each run, however, it was felt that optimal values were not obtained in every case.

7. The MVS measurements

The System

For the MVS measurements the standard operating system of the WTSC was used, namely a VS2 Rel. 3. Different IPS (Installation Performance Specifications) values were used for the different types of runs (see Appendix D and E).
Two modifications were applied to the system:

- The number of TSO users being in main storage at the same time was limited.
  The limit values for the different runs are listed in Appendix D. The limitation was accomplished by the patch described in Appendix F.1.

- The swapping algorithm in MVS was changed (see Appendix F. 2), so that the working set of TSO users at swap-out time was reduced to a minimum.

External Storage and Data Set Distribution

12 disk-drives (channel 2 and 7) were used for the MVS measurements. This was in principle more than needed since none of the disk volumes were filled more than 50%. The data set distribution is depicted in Appendix G. The TSO user data sets were cataloged in a VSAM user catalog which was defined as a STEPCAT.

Batch-only Run

The batch-only run was performed for configuration 1 (base configuration).

It was found that the batch-only execution time (i.e. the time for executing the batch job stream without any timesharing users) was minimal using two initiators only (7 min. 25 sec). Thus two initiators were used for all the MVS measurements.

Remarks for the Mixed Runs

The philosophy of the mixed measurements was to run 40 timesharing users and a batch stream with 100% batch degradation concurrently.
However a problem arose in obtaining 100% degradation.

The System Resource Manager (SRM) showed the tendency to swap out batch jobs too often for the benefit of the TSO users. Using the normal SRM algorithm with the corresponding IPS values it was not possible to allot enough CPU-power to the batch jobs so that a 100% batch degration was achieved.
Therefore a modification to the SRM control algorithm was applied which limited the number of TSO tasks in main storage.
With this limitation of the effective multiprogramming level it was possible to keep the batch tasks in main storage long enough.

Note

MF/1 was active for all the MVS runs. This was necessary to recognize bottlenecks easily when unsatisfactory results were obtained. The influence of the MF/1 overhead was considered negligible and to be the same for all the results.

8. The TSS Measurements

The System

The System used for the measurements was the field test version of TSS/370 Release 2.
Several modifications had been applied to this system (see Appendix F. 3):

TAM II was patched to solve some problems in interfacing with TPNS:

- Patched TAM II to do its own unit exception handling.
- TSS and TAM II do a logical disconnect instead of a physical one. TAM II was patched to do a physical disconnect since TPNS does not understand a logical disconnect.
- TAM II was patched to NO-OP the reverse break feature for 2741' s since TPNS does not support it.
- The TAM II 2 minute LOGON-timer was patched out since without reverse break support in TPNS it could result in the loss of lines.

The following TSS Release 2.0 software problems were found:

- A loop in page migration which caused RE-IPL. The problem was found prior to the runs and was merely applied to the system.
- A great deal of Virtual Memory locking was uncovered in the early testing. It was discovered that the PAT-page handling routines were not processing the locks properly. This was fixed during the measurements.

External Storage and Data Set Distribution

Six disk drives 3330-1 (channel 2 and 7) were used, one for the Auxiliary

Control Volume (ACV) and five for Public Storage. On each of the public volumes there was paging space. The drums were dedicated to paging (channel 1).

Batch-only Run

The batch-only run on the basic configuration took 6 min. 27 sec. Five parallel batch tasks were used.

Remarks for the Mixed Runs

The major work done on the schedule table (see Appendix F) was to treat the batch levels in the same philosophy as the interactive levels. The only other work was to improve the Logon-scheduling. This was done by tuning up level 8.

The mixed mode batch time could be brought into a range of approximately 100% batch degradation by decreasing the delta time on the batch lock levels of the schedule table and varying the number of concurrent jobs running.

The primary performance problems in the interactive area are caused by performance of the customer provided editor and its commands REDIT and FILE. It did not seem appropriate for the TSS-group to tune up a customer provided editor.

Remarks for the TS-only Runs

The runs were done with an old Schedule Table, used by KFA under Rel. 1. (See Appendix H for the listing of the table).

9. The Results

The results of the measurements are presented in Appendix J. They are divided into MVS and TSS measurements, with each group being further divided by mixed and TS-only runs, and then again subdivided by the 5 different configurations.

Each measurement protocol contains:

- the results of the hardware monitor measurement
  (CPU and channel utilization)
  Channel 1 was used for the drums, channels 2 and 7 for the disks.

- the response times for

  - trivial commands
    (see Appendix I for the input transactions
    not listed in Appendix A.1)
  - non-trivial commands
  - execution commands

For each command the following numbers are given:

- NUMBER (How often issued during test)
- LOW RESPONSE (least response time observed)
- AVG RESPONSE (average over all observed times)
- HIGH RESPONSE (largest response time observed)

The values given for SUMMEN mean that all the commands of one type (trivial, non-trivial, exec) are considered to be one command only.

Further the value for the elapsed time for the batch stream is given with the measurement (BATCH).

Acknowledgements

The authors would like to express their gratitude to Dr. F. Hoßfeld for his stimulating interest in this work.
They would like to thank the members of the TSS Marketing and Support Group and the staff of IBM Germany for their support and effort in performing the measurements. The authors are especially indebted to Mr. P. Schiffeler for his help during all phases of this work.

Appendix A

TSO and TSS

Command Distribution

A.1 Distribution of TSO Commands

TRIVIAL

CHANGE	2
DOWN	2
FIND	3
INPUT	24
INSERT	4
LIST	2
TIME	7
TOP	1
VERIFY	1

NONTRIVIAL

ALLOCATE	5
COPY	2
DELETE	13
EDIT	2
END	3
EXEC	5
LISTCAT	1
LIST DS	2
RENUM	1
SAVE	2

EXECUTE

FORT	1
LOADGO	1

A.2 Distribution of TSS Commands

TRIVIAL

CHANGE	2
INPUT	14
INSERT	4
NEXT	1
NEXTPRINT	1
PRINT	1
REVISE	1
TSKTM	6

NONTRIVIAL

CDS'	1
DDEF	5
DSS?	1
END	1
ERASE	12
FILE	1
GAS(PROC)	5
LOCATE	3
PC?	1
POD?	1
PROCDEF	1
QUIT	1
REDIT	1
REKEY	1
VV	2

EXECUTE

CALL	1
FTN	1

Appendix B

TSO and TSS

SCRIPT

B.1 TSO - Script

```
*****************************************************************
* HOUSEKEEPING *
*****************************************************************

TIME
DELETE TEST.FORT
DELETE FT01
DELETE FT02
DELETE FT03
DELETE FT04
DELETE FT07
DELETE GAS.CLIST
DELETE SOURCE.FORT
DELETE SOURCE.LIST
DELETE TEST1.FORT
COPY 'SOURCE.FORT' SOURCE.FORT

*****************************************************************
* DATA MANAGEMENT *
*****************************************************************

TIME
LISTCAT
LISTDS SOURCE.FORT
LISTDS 'SUBLOAD' MEMBERS
COPY SOURCE.FORT TEST1.FORT
DELETE TEST1.FORT

*****************************************************************
* EDIT *
*****************************************************************

TIME
COPY SOURCE.FORT TEST.FORT
EDIT TEST FORTGI
VERIFY
FIND /DIMENSION
LIST * 10
INSERT C THIS IS THE 1. INSERT
CHANGE /C AAA/C
TOP
FIND /DIME
INSERT C THIS IS THE 2. INSERT
DOWN 10
LIST * 2
FIND /J
CHANGE * 20 /J/$$$
DOWN 10
INSERT C $$$
INSERT C THIS IS THE 4 INSERT
RENUM 100 100
SAVE
END
DELETE TEST.FORT
 *****************************************************************
```

```
*************************************************************
 EXECUTION *
*************************************************************


IME
ELETE SOURCE.OBJ
ORT SOURCE LIST PRINT
IME
LLOCATE FILE (FT01F001) DATASET (FT01) NEW
LLOCATE FILE(FT02F001) DATASET(FT02) NEW
LLOCATE FILE (FT03F001) DATASET (FT03) NEW
LLOCATE FILE (FT04F001) DATASET (FT04) NEW
LLOCATE FILE(FT07F001) DATASET (FT07) NEW
OADGO (SOURCE) FORTLIB LIB('SUB.LOAD')
NMAS=0000010,NDET=0000002,ITYPE=00,NCPURP=0000000,NPASS=01,PUNCH=0,RUNID=IO
NMAS=0000000,NDET=0000000,ITYPE=03,NCPURP=0000002,NPASS=02,PUNCH=0,RUNID=EXTPRE
NMAS=0000010,NDET=0000002,ITYPE=01,NCPURP=0000010,NPASS=02,PUNCH=0,RUNID=MIXED
NMAS=0000000,NDET=0000000,ITYPE=10,NCPURP=0000001,NPASS=02,PUNCH=0,RUNID=PAGING
NMAS=0000000,NDET=0000000,ITYPE=00,NCPURP=0000000,NPASS=00,PUNCH=0,RUNID=DUMY


*************************************************************
 PROCEDURES *
*************************************************************


IME
DIT GAS CLIST NEW
ROC 0 KM(0) LITERS(0)
F &KM = 0 THEN -
 DO
   WRITE ONE MUST GIVE KILOMETERS,PLEASE
  GOTO END
   END
F &LITERS = 0 THEN -
 DO
   WRITE ONE MUST GIVE LITERS,PLEASE
     GOTO END
   END
RITE KM/LITER = &EVAL(&KM*100/&LITERS)
RITE LITERS/100KM = &EVAL(&LITERS*100/&KM)
RITE
RITE MILES = &EVAL(&KM*1000/1609)
RITE
RITE GALLONS = &EVAL(&LITERS*1000/3785)
RITE MILES/GALLON = &EVAL((&KM*1000000/1609)/(&LITERS*10000/3785))
ND: EXIT
AVE
ND
XEC GAS 'KM(1010) LITERS(1000)'
XEC GAS 'LITERS(500)'
XEC GAS 'KM(10)'
XEC GAS 'KM(400) LITERS(4000)'
XEC GAS
IME


*************************************************************
```

```
'NEW MASTER                                          IEBUPDTE LOG PAGE 0001

RCE=0,LIST=ALL
  TEXT=80,SCAN=YES,LOG=1

  LOGON US????,TSS
  ERASE FT07
  ERASE FT01
  ERASE FT02
  ERASE FT03
  ERASE FT04
  ERASE TEST                                  HOUSEKEEPING
  ERASE TEST1
  ERASE LIST.BMMD(0)
  ERASE SOURCE.BMMD
  CDS KFASRC.SOURCE.BMMD
  TSKTM
  PC?
  DSS? USERLIB                                DATA MANAGEMENT
  POD? USERLIB
  VV SOURCE.BMMD.TEST1
  ERASE TEST1
  TSKTM
  VV SOURCE.BMMD.TEST
  REDIT TEST
  LOC/DIMENSION/
  PR 10
  I C    THIS IS AN INSERT
  CH/C AAAA/C
  LOC/DIME/                                   EDIT
  I C     THIS IS A SECOND LOCATE
  NP 10 2
  LOC/J/
  CH/J/$$$/20
  N 10
  I C $$$
  I C    THIS IS THE 4TH INSERT
  REKEY
  FILE TEST
  QUIT
  ERASE TEST
  TSKTM
  ERASE USERLIB(BMMD)
  FTN BMMD.Y
  TSKTM
  DDEF FT01F001,VS,FT01,RET=TL,DISP=NEW
  DDEF FT02F001,VS,FT02,RET=TL,DISP=NEW
  DDEF FT03F001,VS,FT03,RET=TL,DISP=NEW       EXECUTION
  DDEF FT04F001,VS,FT04,RET=TL,DISP=NEW
  DDEF FT07F001,VS,FT07,RET=TL,DISP=NEW
  CALL BMMD
   NMAS=0000010,NDET=0000002,ITYPE=00,NCPURP=0000000,NPASS=01,PUNCH=0,RUNID=IO
   NMAS=0000000,NDET=0000000,ITYPE=03,NCPURP=0000002,NPASS=02,PUNCH=0,RUNID=EXTPRI
   NMAS=0000010,NDET=0000002,ITYPE=01,NCPURP=0000010,NPASS=02,PUNCH=0,RUNID=MIXED
```

```
NEW MASTER                                          IEBUPDTE LOG PAGE 0002

  NMAS=0000000,NDET=0000000,ITYPE=10,NCPURP=0000001,NPASS=02,PUNCH=0,RUNID=PAGING
  NMAS=0000000,NDET=0000000,ITYPE=00,NCPURP=0000000,NPASS=00,PUNCH=0,RUNID=END
 TSKTM
 PROCDEF GAS
 _REVISE 100,LAST
 PARAM  KM=$KM,LITERS=$LITERS
 IF '$KM'='';DISPLAY 'ONE MUST GIVE KILOMETERS PLEASE';GOTO 'END'
 IF '$LITERS'='';DISPLAY 'ONE MUST GIVE LITERS AS THE SECOND PARM,PLEASE.K1';GOTO
 DISPLAY 'KM/LITER= :',$KM/$LITERS
 DISPLAY 'LITERS/100KM= :',$LITERS*100./$KM
 DISPLAY '','MILES= :',$KM/1.609
 DISPLAY ' ','GALLONS= :',$LITERS/3.785
 DISPLAY 'MILES/GAL= :',($KM/1.609)/($LITERS/3.785)
 'END'
 _END
 GAS 1010.,10.
 GAS ,5.
 GAS 10.
 GAS 400.,40.
 GAS
 TSKTM
V NM DIRECTORY. TTR IS NOW ALTERED.
```

PROCEDURES

Appendix C

MVS and TSS

JOBSTREAM

and

SOURCE PROGRAM

```
//*********************************************************************
//*   JOBSTREAM   *
//*********************************************************************


 //A JOB 41724,SCHIFFELER,MSGLEVEL=(1,1),REGION=1000K
//JOBLIB DD DSN=LOAD,VOL=SER=KFABM1,DISP=SHR,UNIT=3330
/*JOBPARM T=1,L=5
//S1  EXEC  PGM=BMLARGE1
//FT01F001 DD DSNAME=&&FT01,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT02F001 DD DSNAME=&&FT02,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT03F001 DD DSNAME=&&FT03,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT04F001 DD DSNAME=&&FT04,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT06F001 DD SYSOUT=A
//FT07F001 DD SYSOUT=B
//FT05F001 DD *
 NMAS=0000000,NDET=0000000,ITYPE=10,NCPURP=0000010,NPASS=04,PUNCH=1,RUNID=LMXPG
 NMAS=0000000,NDET=0000000,ITYPE=00,NCPURP=0000000,NPASS=00,PUNCH=0,RUNID=DUMY
/*        END OF JOB
//S2  EXEC  PGM=BMLARGE1
//FT01F001 DD DSNAME=&&FT01,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT02F001 DD DSNAME=&&FT02,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT03F001 DD DSNAME=&&FT03,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT04F001 DD DSNAME=&&FT04,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT06F001 DD SYSOUT=A
//FT07F001 DD SYSOUT=B
//FT05F001 DD *
 NMAS=0000050,NDET=0000005,ITYPE=10,NCPURP=0000002,NPASS=04,PUNCH=1,RUNID=LMXMX
 NMAS=0000000,NDET=0000000,ITYPE=00,NCPURP=0000000,NPASS=00,PUNCH=0,RUNID=DUMY
/*        END OF JOB
//S3  EXEC  PGM=BMLARGE1
//FT01F001 DD DSNAME=&&FT01,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT02F001 DD DSNAME=&&FT02,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT03F001 DD DSNAME=&&FT03,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT04F001 DD DSNAME=&&FT04,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT06F001 DD SYSOUT=A
//FT07F001 DD SYSOUT=B
//FT05F001 DD *
 NMAS=0000050,NDET=0000005,ITYPE=00,NCPURP=0000000,NPASS=04,PUNCH=1,RUNID=LMXIO
 NMAS=0000000,NDET=0000000,ITYPE=00,NCPURP=0000000,NPASS=00,PUNCH=0,RUNID=DUMY
/*        END OF JOB
```

```
//B JOB 41724,SCHIFFELER,MSGLEVEL=(1,1)
//JOBLIB DD DSN=LOAD,VOL=SER=KFABM1,DISP=SHR,UNIT=3330
/*JOBPARM T=1,L=5
//S1  EXEC  PGM=SYNTHJOB
//FT01F001 DD DSNAME=&&FT01,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT02F001 DD DSNAME=&&FT02,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT03F001 DD DSNAME=&&FT03,DISP=(,DELETE),SPACE=(CYL,2),
//FT04F001 DD DSNAME=&&FT04,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT06F001 DD SYSOUT=A
//FT07F001 DD SYSOUT=B
//FT05F001 DD *
 NMAS=0000000,NDET=0000000,ITYPE=10,NCPURP=0000007,NPASS=04,PUNCH=1,RUNID=LMXPG
 NMAS=0000000,NDET=0000000,ITYPE=00,NCPURP=0000000,NPASS=00,PUNCH=0,RUNID=DUMY
/*       END OF JOB
//S2  EXEC  PGM=SYNTHJOB
//FT01F001 DD DSNAME=&&FT01,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT02F001 DD DSNAME=&&FT02,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT03F001 DD DSNAME=&&FT03,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT04F001 DD DSNAME=&&FT04,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT06F001 DD SYSOUT=A
//FT07F001 DD SYSOUT=B
//FT05F001 DD *
 NMAS=0000100,NDET=0000010,ITYPE=10,NCPURP=0000007,NPASS=04,PUNCH=1,RUNID=LMXMX
 NMAS=0000000,NDET=0000000,ITYPE=00,NCPURP=0000000,NPASS=00,PUNCH=0,RUNID=DUMY
/*       END OF JOB
//S3  EXEC  PGM=SYNTHJOB
//FT01F001 DD DSNAME=&&FT01,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT02F001 DD DSNAME=&&FT02,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT03F001 DD DSNAME=&&FT03,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT04F001 DD DSNAME=&&FT04,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT06F001 DD SYSOUT=A
//FT07F001 DD SYSOUT=B
//FT05F001 DD *
 NMAS=0000100,NDET=0000010,ITYPE=00,NCPURP=0000000,NPASS=04,PUNCH=1,RUNID=LMXIO
 NMAS=0000000,NDET=0000000,ITYPE=00,NCPURP=0000000,NPASS=00,PUNCH=0,RUNID=DUMY
/*       END OF JOB
```

```
//C JOB 41724,SCHIFFELER,MSGLEVEL=(1,1)
//JOBLIB DD DSN=LOAD,VOL=SER=KFABM1,DISP=SHR,UNIT=3330
/*JOBPARM T=1,L=5
//S1  EXEC  PGM=SYNTHJOB
//FT01F001 DD DSNAME=&&FT01,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT02F001 DD DSNAME=&&FT02,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT03F001 DD DSNAME=&&FT03,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT04F001 DD DSNAME=&&FT04,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT06F001 DD SYSOUT=A
//FT07F001 DD SYSOUT=B
//FT05F001 DD *
 NMAS=0000000,NDET=0000000,ITYPE=10,NCPURP=0000010,NPASS=20,PUNCH=1,RUNID=LCPG1
 NMAS=0000010,NDET=0000001,ITYPE=02,NCPURP=0000010,NPASS=20,PUNCH=1,RUNID=LCSP
 NMAS=0000000,NDET=0000000,ITYPE=10,NCPURP=0000010,NPASS=20,PUNCH=1,RUNID=LCPG2
 NMAS=0000010,NDET=0000001,ITYPE=03,NCPURP=0000010,NPASS=20,PUNCH=1,RUNID=LCDP
 NMAS=0000000,NDET=0000000,ITYPE=00,NCPURP=0000000,NPASS=00,PUNCH=0,RUNID=DUMY
/*        END OF JOB
//D JOB 41724,SCHIFFELER,MSGLEVEL=(1,1),REGION=1000K
//JOBLIB DD DSN=LOAD,VOL=SER=KFABM1,DISP=SHR,UNIT=3330
/*JOBPARM T=1,L=5
//S1  EXEC  PGM=BMLARGE1
//FT01F001 DD DSNAME=&&FT01,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT02F001 DD DSNAME=&&FT02,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT03F001 DD DSNAME=&&FT03,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT04F001 DD DSNAME=&&FT04,DISP=(,DELETE),SPACE=(CYL,2),
// UNIT=SYSDA,DCB=(BLKSIZE=3988,LRECL=208,RECFM=VBS,BUFNO=2)
//FT06F001 DD SYSOUT=A
//FT07F001 DD SYSOUT=B
//FT05F001 DD *
 NMAS=0000000,NDET=0000000,ITYPE=10,NCPURP=0000010,NPASS=06,PUNCH=1,RUNID=LCPG1
 NMAS=0000005,NDET=0000001,ITYPE=02,NCPURP=0000010,NPASS=07,PUNCH=1,RUNID=LCSP
 NMAS=0000000,NDET=0000000,ITYPE=10,NCPURP=0000010,NPASS=07,PUNCH=1,RUNID=LCPG2
 NMAS=0000010,NDET=0000001,ITYPE=03,NCPURP=0000010,NPASS=07,PUNCH=1,RUNID=LCDP
 NMAS=0000000,NDET=0000000,ITYPE=00,NCPURP=0000000,NPASS=00,PUNCH=0,RUNID=DUMY
/*        END OF JOB
```

```
   LOGON USER81
ERASE FT01
ERASE FT02
ERASE FT03
ERASE FT04
ERASE FT071
ERASE FT072
ERASE FT073
DDEF FT01F001,VS,FT01,DISP=NEW,RET=TL
DDEF FT02F001,VS,FT02,DISP=NEW,RET=TL
DDEF FT03F001,VS,FT03,DISP=NEW,RET=TL
DDEF FT04F001,VS,FT04,DISP=NEW,RET=TL
DDEF FT07F001,VS,FT071,DISP=NEW,DCB=(RECFM=F,LRECL=80),RET=TL
CALL BMSM1
 NMAS=0000000,NDET=0000000,ITYPE=10,NCPURP=0000007,NPASS=04,PUNCH=1,RUNID=LMXPG
 NMAS=0000000,NDET=0000000,ITYPE=00,NCPURP=0000000,NPASS=00,PUNCH=0,RUNID=DUMY
RELEASE FT07F001
DDEF FT07F001,VS,FT072,DISP=NEW,DCB=(RECFM=F,LRECL=80),RET=TL
CALL BMSM1
 NMAS=0000100,NDET=0000010,ITYPE=10,NCPURP=0000007,NPASS=04,PUNCH=1,RUNID=LMXMX
 NMAS=0000000,NDET=0000000,ITYPE=00,NCPURP=0000000,NPASS=00,PUNCH=0,RUNID=DUMY
RELEASE FT07F001
DDEF FT07F001,VS,FT073,DISP=NEW,DCB=(RECFM=F,LRECL=80),RET=TL
CALL BMSM1
 NMAS=0000100,NDET=0000010,ITYPE=00,NCPURP=0000000,NPASS=04,PUNCH=1,RUNID=LMXIO
 NMAS=0000000,NDET=0000000,ITYPE=00,NCPURP=0000000,NPASS=00,PUNCH=0,RUNID=DUMY
PUNCH FT071,ERASE=Y
PUNCH FT072,ERASE=Y
PUNCH FT073,ERASE=Y
   LOGOFF
   LOGON USER82
ERASE FT01
ERASE FT02
ERASE FT03
ERASE FT04
ERASE FT071
ERASE FT072
ERASE FT073
DDEF FT01F001,VS,FT01,DISP=NEW,RET=TL
DDEF FT02F001,VS,FT02,DISP=NEW,RET=TL
DDEF FT03F001,VS,FT03,DISP=NEW,RET=TL
DDEF FT04F001,VS,FT04,DISP=NEW,RET=TL
DDEF FT07F001,VS,FT071,DISP=NEW,DCB=(RECFM=F,LRECL=80),RET=TL
DEMON
*BMLA1
 NMAS=0000000,NDET=0000000,ITYPE=10,NCPURP=0000010,NPASS=04,PUNCH=1,RUNID=LMXPG
 NMAS=0000000,NDET=0000000,ITYPE=00,NCPURP=0000000,NPASS=00,PUNCH=0,RUNID=DUMY
RELEASE FT07F001
DDEF FT07F001,VS,FT072,DISP=NEW,DCB=(RECFM=F,LRECL=80),RET=TL
CALL BMLA1
 NMAS=0000050,NDET=0000005,ITYPE=10,NCPURP=0000002,NPASS=04,PUNCH=1,RUNID=LMXMX
 NMAS=0000000,NDET=0000000,ITYPE=00,NCPURP=0000000,NPASS=00,PUNCH=0,RUNID=DUMY
RELEASE FT07F001
DDEF FT07F001,VS,FT073,DISP=NEW,DCB=(RECFM=F,LRECL=80),RET=TL
CALL BMLA1
 NMAS=0000050,NDET=0000005,ITYPE=00,NCPURP=0000000,NPASS=04,PUNCH=1,RUNID=LMXIO
 NMAS=0000000,NDET=0000000,ITYPE=00,NCPURP=0000000,NPASS=00,PUNCH=0,RUNID=DUMY
PUNCH FT071,ERASE=Y
PUNCH FT072,ERASE=Y
PUNCH FT073,ERASE=Y
```

```
    LOGOFF
    LOGON USER83
  ERASE FT01
  ERASE FT02
  ERASE FT03
  ERASE FT04
  ERASE FT071
  DDEF FT01F001,VS,FT01,DISP=NEW,RET=TL
  DDEF FT02F001,VS,FT02,DISP=NEW,RET=TL
  DDEF FT03F001,VS,FT03,DISP=NEW,RET=TL
  DDEF FT04F001,VS,FT04,DISP=NEW,RET=TL
  DDEF FT07F001,VS,FT071,DISP=NEW,DCB=(RECFM=F,LRECL=80),RET=TL
  CALL BMSM1
    NMAS=0000000,NDET=0000000,ITYPE=10,NCPURP=0000010,NPASS=20,PUNCH=1,RUNID=LCPG1
    NMAS=0000010,NDET=0000001,ITYPE=02,NCPURP=0000010,NPASS=20,PUNCH=1,RUNID=LCSP
    NMAS=0000000,NDET=0000000,ITYPE=10,NCPURP=0000010,NPASS=20,PUNCH=1,RUNID=LCPG2
    NMAS=0000010,NDET=0000001,ITYPE=03,NCPURP=0000010,NPASS=20,PUNCH=1,RUNID=LCDP
    NMAS=0000000,NDET=0000000,ITYPE=00,NCPURP=0000000,NPASS=00,PUNCH=0,RUNID=DUMY
  PUNCH FT071,ERASE=Y
    LOGOFF
    LOGON USER84
  ERASE FT01
  ERASE FT02
  ERASE FT03
  ERASE FT04
  ERASE FT071
  DDEF FT01F001,VS,FT01,DISP=NEW,RET=TL
  DDEF FT02F001,VS,FT02,DISP=NEW,RET=TL
  DDEF FT03F001,VS,FT03,DISP=NEW,RET=TL
  DDEF FT04F001,VS,FT04,DISP=NEW,RET=TL
  DDEF FT07F001,VS,FT071,DISP=NEW,DCB=(RECFM=F,LRECL=80),RET=TL
  CALL BMLA1
    NMAS=0000000,NDET=0000000,ITYPE=10,NCPURP=0000010,NPASS=06,PUNCH=1,RUNID=LCPG1
    NMAS=0000005,NDET=0000001,ITYPE=02,NCPURP=0000010,NPASS=07,PUNCH=1,RUNID=LCSP
    NMAS=0000000,NDET=0000000,ITYPE=10,NCPURP=0000010,NPASS=07,PUNCH=1,RUNID=LCPG2
    NMAS=0000010,NDET=0000001,ITYPE=03,NCPURP=0000010,NPASS=07,PUNCH=1,RUNID=LCDP
    NMAS=0000000,NDET=0000000,ITYPE=00,NCPURP=0000000,NPASS=00,PUNCH=0,RUNID=DUMY
  PUNCH FT071,ERASE=Y
    LOGOFF
```

```
0000100 //A1ZDV0C6 JOB (1,2),ALEXANDER,CLASS=S
0000150 /*JOBPARM T=1,L=5
0000200 //*A019SYNT JCB (A01I,BERRY),'SYNTHETIC JOB',CLASS=A
0000300 // EXEC CASSF
0000400 //*ASM.SYSIN DD *
0000500 //C.SYSIN DD *
0000600 * ROUTINE TO COMPUTE TIME IN BINARY
0000700 *   CALL DATIME (ARRAY)
0000800 DATIME   CSECT
0000900          B      12(15)
0001000          DC     X'07' LENGTH OF NAME
0001100          DC     CL7'DATIME'
0001200          STM    14,12,12(13)  SAVE REGISTERS
0001300          BALR   10,0
0001400          USING *,10
0001500          ST     13,SAVEA+4
0001600          LA     13,SAVEA
0001700          L      R2,0(R1)      GET ADDRESS OF ARRAY
0001800 *
0001900          TIME   BIN GET TIME AS BINARY INTEGER
0002000 *
0002100          ST     RC,0(R2)
0002200          L      13,SAVEA+4
0002300          LM     14,12,12(13)
0002400          MVI    12(13),X'FF'
0002500          BR     14
0002600 SAVEA    DS     18F
0002700 R0       EQU    0
0002800 R1       EQU    1
0002900 R2       EQU    2
0003000          END
0003100 /*
0003200 // EXEC CLFORT1,DS='SYS2.KFALINK',NAME=BMLARGE1
0003300 //*    'THIS IS TO STORE INTO  MVS  THE BMLARGE1
0003400 //*FORT.SYSIN DD *
0003500 //C.SYSIN DD *
0003600 C
0003700 C
0003800 C         ORIGINAL STRUCTURE OF THIS JOB PRESENTED BY W. BUCHHOLZ IN
0003900 C            IBM SYSTEMS JOURNAL, VOL. 8, NO. 4
0004000 C         TRANSLATED TO FORTRAN BY J. F. MARANZANO, BELL TEL. LABS
0004100 C         MODIFIED TO PROVIDE MORE DATA AND ADAPTED FOR CERTAIN
0004200 C           EXPERIMENTAL DESIGNS BY T. E. BELL, THE RAND CORP.
0004300 C         MODIFIED TO BETTER EXERCISE THE CPU BY C. L. HENMAN, MCAUTO
0004400 C         FURTHER MODIFIED BY T. E. BELL TO EASE DATA ANALYSIS AND TO
0004500 C           RUN ON MORE MACHINES
0004600 C         MODIFIED TO REQUIRE MORE MAIN STORAGE AND CAUSE PAGING IN
0004700 C         A VIRTUAL SYSTEM BY GAYLE HALL, LITTON RESTON COMPUTER CENTER
0004720 C           MODIFIED TO REQUIRE EVEN MORE MAIN CORE (548K) BY RICHARD
0004740 C         ALEXANDER, KFA-JUELICH 28 JANUARY 1975
0004800 C
0004900 C
0005000 C         THIS PROGRAM IS FOR USE IN GENERATING A SYNTHETIC BATCH STREAM
0005100 C         PARAMETERS ON INPUT CARDS CAUSE THE JOB TO USE THE COMPUTER
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0005200 C       SYSTEM LIKE A CPU-BOUND JOB, AN I/O BOUND JOB, OR A JOB WITH
0005300 C       ANY DEGREE OF CPU AND I/O MIX.  EACH PARAMETER CARD CAUSES
0005400 C       ONE OR MORE TIMED PASSES THROUGH THE SPECIFIED PASS.  AT THE
0005500 C       END OF WORK FOR ONE PARAMETER CARD, THE RESULTS ARE PRINTED
0005600 C       OUT.  DIFFERENT TYPES OF PASSES CAN BE SPECIFIED BY INPUTTING
0005700 C       SEVERAL PARAMETER CARDS.  END OF INPUT IS INDICATED BY A
0005800 C       DUMMY PARAMETER CARD WITH NPASS=0.
0005900 C
0006000 C       THE JOB FIRST INITIALIZES FILES FOR A SET OF PASSES (SPECIFIED
0006100 C       BY ONE PARAMETER CARD).  EACH PASS HAS ITS OWN INITIALIZATION
0006200 C       AND TERMINATION TO REWIND FILES AND TO SUMMARIZE RESULTS.
0006300 C       HOWEVER, OUTPUT IS HELD UNTIL ALL PASSES OF THE PARAMETER CARD
0006400 C       ARE COMPLETED.  THIS ELIMINATES SYSOUT BEING OVERLAPPED WITH
0006500 C       TESTS.
0006600 C
0006700 C       I/O CAN BE DIRECTED TO TAPE, DISC, OR DRUM.  READING AND
0006800 C       WRITING ARE UNFORMATTED TO REDUCE FORTRAN CONVERSION ROUTINE
0006900 C       EXECUTION.  I/O UNITS ARE USED AS FOLLOWS -
0007000 C       1.  MASTER FILE WRITTEN DURING PASS SET INITIALIZATION.  IT IS
0007100 C           SUBSEQUENTLY READ FOR WRITING TO FILE 4.
0007200 C       2.  DETAIL FILE WRITTEN DURING PASS SET INITIALIZATION.  IT IS
0007300 C           SUBSEQUENTLY READ FOR WRITING TO FILE 3.
0007400 C       3.  DETAIL FILE WRITTEN DURING PASS FROM FILE 2.
0007500 C       4.  MASTER FILE WRITTEN DURING PASS FROM FILE 1.
0007600 C
0007700 C       IF A PASS HAS MASTER RECORDS, ONE OR MORE MASTER RECORDS ARE
0007800 C       PROCESSED FOR EACH DETAIL RECORD.  EACH DETAIL RECORD PROCESSED
0007900 C       IS FOLLOWED BY THE NUMBER OF CPU REPETITIONS INDICATED ON THE
0008000 C       PARAMETER CARD.  IF NDET = 0, NO CPU REPETITIONS WILL BE
0008100 C       PERFORMED.  HOWEVER, IF NCPURP = 0, DETAIL RECORDS WILL BE
0008200 C       PROCESSED IF REQUESTED.
0008300 C
0008400 C       IF A PASS HAS NO MASTER RECORDS, NOUPRP REPETITIONS OF THE
0008500 C       CPU LOOP WILL BE PERFORMED.
0008600 C
0008700 C
0008800 C       THE PROGRAM IS WRITTEN IN FORTRAN, AND CALLS A ROUTINE NAMED
0008900 C       ZTIME TO OBTAIN THE CURRENT COMPUTER CLOCK VALUE.  THIS
0009000 C       ROUTINE MUST BE WRITTEN FOR EACH SYSTEM.
0009100 C
0009200 C
0009300 C       INPUT:
0009400 C             NMAS      NUMBER OF MASTER RECORDS.  NMAS MUST BE GREATER
0009500 C                         THAN ZERO FOR ANY I/O TO BE DONE.
0009600 C             NDET      NUMBER OF DETAIL RECORDS (LESS THAN OR EQUAL TO
0009700 C                         NMAS)
0009800 C             ITYPE     INDICATOR OF THE TYPE CPU ACTIVITY USED WITHIN
0009900 C                         THE CPU MINOR LOOP AS FOLLOWS:
0010000 C                          ITYPE          CPU ACTIVITY
0010100 C                            1          INTEGER ARITHMETIC
0010200 C                            2          FLOATING POINT ARITHMETIC
0010300 C                            3          DOUBLE PRECISION ARITHMETIC
0010400 C                            4          SUBROUTINE CALLS
0010500 C                            5          MOVE SEQUENTIALLY BETWEEN CONTIG
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0010600 C                                        BLOCKS
0010700 C                              6       MOVE RANDOMLY BETWEEN CONTIGUOUS
0010800 C                                        BLOCKS
0010900 C                              7       MOVE RANDOMLY BETWEEN NON-CONTIG
0011000 C                                        BLOCKS
0011100 C                              8       LOOP WITHOUT DO STATEMENT
0011200 C                              9       LOOP WITH    DO STATEMENT
0011300 C                              10      PAGING
0011400 C                  NCPURP    NUMBER OF REPETITIONS OF CPU MINOR LOOP FOR
0011500 C                              EACH DETAIL RECORD.  IF NO DETAIL OR MASTER
0011600 C                              RECORDS, NCPUR IS THE TOTAL NUMBER OF
0011700 C                              REPETITIONS PER PASS IN TOTALLY CPU-BOUND
0011800 C                              PASSES.
0011900 C                  NPASS     NUMBER OF IDENTICAL PASSES THROUGH LOOP DEFINED
0012000 C                              BY NMASS, NDET, ITYPE, AND NCPURP.
0012100 C            **************INPUT BELOW HERE CAN BE IGNORED IF DESIRED********
0012200 C            *     PUNCH     IF 0, NO RESULTS WILL BE PUNCHED.  THE
0012300 C            *                FINAL TIME WILL BE PUNCHED IF THE
0012400 C            *                DUMMY LAST PARAMETER CARD HAS PUNCH
0012500 C            *                NOT EQUAL TO 0.
0012600 C            *     RUNID     IDENTIFIER OF EXPERIMENTAL RUN.  (MAY BE
0012700 C            *                LEFT BLANK IF NOT NEEDED.)
0012800 C            **************INPUT ABOVE HERE CAN BE IGNORED IF DESIRED********
0012900 C
0013000 C            THE FORMAT OF THE PARAMETER INPUT CARD IS AS SHOWN BELOW.
0013100 C            THE ZEROS WOULD, OF COURSE, BE REPLACED WITH THE DESIRED
0013200 C            VALUES.  THE VARIABLE IDENTIFIERS ARE PRESENT ONLY FOR
0013300 C            CONVENIENCE.  (PARAMETER CARDS ARE READ UNDER FORMAT 88.)
0013400 C
0013500 C            1         2         3         4         5         6         7
0013600 C234567890123456789012345678901234567890123456789012345678901234567890123456789012
0013700 CNMAS=0000000,NDET=0000000,ITYPE=00,NCPURP=0000000,NPASS=00,PUNCH=0,RUNI
0013800 C
0013900 C
0014000 C
0014100 C            THE MASTER FILE AND DETAIL FILE ARE DEFINED HERE
0014200 C            BY THE LENGTH OF THE 'RECORD' VARIABLE WHICH WILL BE WRITTEN.
0014300 C            'RECORD' MUST BE DIMENSIONED AS RECORD(N) WITH N 1 OR MORE.
0014400           INTEGER RECORD (47)
0014500           INTEGER START, SUM, TABLE(1000), PUNCH
0014600           DIMENSION TIMES(100,2)
0014700           DIMENSION ARRAY(1000), INDEX(1000)
0014810 C
0014820 C         CHANGED BY R. ALEXANDER KFA, 28 JAN 75
0014830 C         DIMENSION MATRX1(1024,6),MATRX2(1024,6)
0014840 C           |    |    |     |    |    |    |    |
0014850           DIMENSION MATRX1(1024,50),MATRX2(1024,50)
0014900           DOUBLE PRECISION  DP1,DP2,DP3,DP4,DP5,DSUM
0015000 C
0015100           CALL ZTIME(TIMEN)
0015200           N = 10
0015300           START = 100
0015400 C
0015500           WRITE(6,87)
```

```
0015600 C
0015700 C          READ INPUT PARAMETERS
0015800 C
0015900 1000   READ (5,88) NMAS, NDET, ITYPE, NCPURP, NPASS, PUNCH, RUN
0016000        WRITE(6,89) NMAS, NDET, ITYPE, NCPURP, NPASS, PUNCH, RUN
0016100 C
0016200 C          CHECK FOR UNUSUAL INPUT
0016300 C
0016400 C          END OF INPUT CARDS
0016500        IF (NPASS .LE. 0) GO TO 9000
0016600 C          MORE DETAIL THAN MASTER  --  DISREGARD
0016700        IF(NMAS .GE. NDET) GO TO 30
0016800        WRITE(6, 90)
0016900        GO TO 1000
0017000 C          REQUESTED CPU REPETITIONS, BUT NDET = 0, NMAS GT 0
0017100 30     IF((NMAS .LE. 0) .OR. (NDET .GT. 0) .OR. (NCPURP .LE. 0)) GO TO 32
0017200        WRITE(6,91)
0017300 32     IF(ITYPE .NE. 0 .OR. NCPURP .EQ. 0) GO TO 33
0017400        WRITE(6, 92)
0017500        ITYPE = 1
0017600        GO TO 33
0017700 31     IF (ITYPE.LE.11) GO TO 33
0017800        WRITE (6,92)
0017900        ITYPE = 1
0018000 33     CONTINUE
0018100 C          PUNCH PARAMETERS IF REQUESTED
0018200        IF(PUNCH .NE. 0) WRITE (7, 86) NMAS, NDET, ITYPE, NCPURP,
0018300       1   NPASS, PUNCH, RUN
0018400 C
0018500 C          END OF PARAMETER INPUT PROCESSING
0018600 C
0018700 C
0018800 C          SET UP ARRAYS FOR CPU ACTIVITY
0018900 C
0019000        MKEY = 0
0019100        LKEY = 0
0019200        IF(ITYPE .EQ. 1) GO TO 201
0019300        IF(ITYPE .EQ. 6 .OR. ITYPE .EQ. 7) GO TO 202
0019400 C          NO SETUP REQUIRED
0019500        GO TO 249
0019600 C
0019700 C          INTEGER TABLE SETUP
0019800 201    K = N**3
0019900        DO 200 I=1,K
0020000 200    TABLE(I) = START+I-1
0020100 C
0020200        GO TO 249
0020300 C          MOVES -- SETUP INDEX FOR 'RANDOM' MOVES
0020400 C          'RANDOMNESS' AMOUNTS TO REGULAR JUMPS AROUND AN ARRAY
0020500 C          INSTEAD OF SEQUENTIALLY REFERENCING CORE.  IT IS
0020600 C          DESIGNED TO APPEAR RANDOM ON SOME MACHINES.
0020700 C
0020800 202    DO 220 I = 1, 1000
0020900        J = I - 1
```

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0021000        INDEX(I) = 1 + (I/20) + 50 * MOD(J, 20)
0021100 220    CONTINUE
0021200        GO TO 249
0021300 C
0021400 C         SET UP FILES FOR I/O ACTIVITY
0021500 C
0021600 249    IF(NMAS .EQ.0) GO TO 280
0021700 C
0021800 C         MASTER GENERATION
0021900        RECORD(1) = 0
0022000        DO 250 MKEY=1,NMAS
0022100        RSUM = 0.
0022200        MCHK = MKEY
0022300 250    WRITE (1) MKEY, RSUM, MCHK, RECORD
0022400        RECORD(1) = 1
0022500        WRITE (1) MKEY, RSUM, MCHK, RECORD
0022600        RECORD(1) = 0
0022700        ENDFILE 1
0022800 C
0022900 251    IF(NDET .EQ. 0)GO TO 280
0023000 C
0023100 C         DETAIL GENERATION
0023200        NRATO = NMAS/NDET
0023300        DO 275 LKEY = NRATO,NMAS,NRATO
0023400        DSUM =0.
0023500        LCHK = LKEY
0023600 275    WRITE (2) LKEY, DSUM, LCHK, RECORD
0023700        RECORD(1) = 1
0023800        WRITE (2) LKEY, DSUM, LCHK, RECORD
0023900        RECORD(1) = 0
0024000        ENDFILE 2
0024100 C
0024200 C
0024300 C
0024400 280    CONTINUE
0024500 C
0024600 C
0024700 C         DO LOOP NPASS TIMES
0024800 C
0024900        DO 1 ICNT = 1, NPASS
0025000 C
0025100 C         IF NO MASTER OR DETAILED RECORDS, SKIP I/O SETUP
0025200        IF(NMAS .EQ. 0) GO TO 285
0025300        KCNT = 0
0025400        REWIND 4
0025500        REWIND 1
0025600        READ (1) MKEY, RSUM, MCHK, RECORD
0025700        IF(NDET .GT. 0) GO TO 283
0025800        LKEY = 999999
0025900        GO TO 285
0026000 283    REWIND 3
0026100        REWIND 2
0026200        READ (2) LKEY, DSUM, LCHK, RECORD
0026300 C
```

```
0026400 C
0026500 C        START TIMED PASS                    ***********************************
0026600 C
0026700 285   CALL ZTIME(FSTRTM)
0026800       TIMES(ICNT, 1) = FSTRTM
0026900 C
0027000 C
0027100 400   IF(MKEY-LKEY)  475,450,425
0027200 C        SEQUENCE ERROR
0027300 425   WRITE(6,94)
0027400       STOP   6
0027500 C        IF NOT REQUESTED, SKIP THE COMPUTE KERNEL
0027600 450   IF(NCPURP .LE. 0) GO TO 301
0027700 C
0027800 C
0027900 C        COMPUTE KERNELS
0028000 C
0028100 C        REPEAT NCPUR TIMES FOR EACH DETAIL RECORD (OR JUST NCPUR IF
0028200 C        NMAS = NDET = 0)
0028300 C
0028400 C        START CPU LOOP                                          **************
0028500       GO TO (111,222,333,444,555,666,777,888,999,1010),ITYPE
0028600 C
0028700 C        INTEGER ARITHMETIC
0028800 C
0028900 111   CONTINUE
0029000       DO 300 I = 1, NCPURP
0029100       SUM = 0
0029200       IU = 0
0029300       J = 0
0029400       DO 350 K=1,N
0029500       J = J+(6*IU+1)
0029600       SUM = SUM + TABLE(J)
0029700 350   IU =IU +K
0029800       LSUM = (N*(N+1))/2
0029900       IF(START .EQ. (SUM-LSUM*LSUM)/N+1)GO TO 300
0030000       WRITE(6,96)
0030100       STOP  5
0030200 300   CONTINUE
0030300       GO TO 850
0030400 C
0030500 C        FLOATING POINT ARITHMETIC
0030600 C
0030700 222   CONTINUE
0030800       B = 2.0
0030900       D = 4.0
0031000       E = 5.0
0031100       DO 330 I=1,NCPURP
0031200       SUM1=0.
0031300       DO 325 J=1,N
0031400       G=E*B+D**3/64.-5.*(E-(B+1.))
0031500       H=G+G*G-G/G+2.*G-2.0
0031600 325   SUM1=SUM1+H
0031700 330   CONTINUE
```

```
0031800         GO TO 850
0031900 C
0032000 C          DOUBLE PRECISION ARITHMETIC
0032100 C
0032200 333     CONTINUE
0032300         DO 396 I=1,NCPURP
0032400         DP4 = 2.0
0032500         DP5 = 4.0
0032600         DSUM=0.
0032700         DO 390 J=1,N
0032800         DP3= E
0032900         DP1=DP3*DP4+DP5**3/64.-5.*(DP3-1.)
0033000         DP2=DP1+DP1*DP1-DP1/DP1+2.*DP1-2.0
0033100 390     DSUM=DSUM+DP2
0033200 396     CONTINUE
0033300         GO TO 850
0033400 C
0033500 C          SUBROUTINE CALLS
0033600 C
0033700 444     CONTINUE
0033800         DO 480 I=1,NCPURP
0033900         CALL SUB1
0034000         CALL SUB2
0034100         CALL SUB3
0034200         CALL SUB4
0034300         CALL SUB5
0034400 480     CONTINUE
0034500         GO TO 850
0034600 C
0034700 C          MOVE SEQUENTIALLY BETWEEN CONTIGUOUS 1K WORD BLOCKS
0034800 C
0034900 555     CONTINUE
0035000         CALL SUB6 (NCPURP, ARRAY, INDEX, ITYPE)
0035100 C          (ARRAY IS A BLOCK OF DATA USED ELSEWHERE, INDEX PROVIDES
0035200 C          INDICES FOR RANDOM MOVES, AND JTYPE INDICATES THE TYPE OF MOVE
0035300         GO TO 850
0035400 C
0035500 C          MOVE RANDOMLY TO CONTIGUOUS 1K WORD BLOCKS
0035600 C
0035700 666     CONTINUE
0035800         CALL SUB6 (NCPURP, ARRAY, INDEX, ITYPE)
0035900         GO TO 850
0036000 C
0036100 C          MOVE RANDOMLY TO NON-CONTIGUOUS 1K BLOCKS
0036200 C
0036300 777     CONTINUE
0036400         CALL SUB6 (NCPURP, ARRAY, INDEX, ITYPE)
0036500         GO TO 850
0036600 C
0036700 C          LOOP WITHOUT DO STATEMENT
0036800 C
0036900 888     CONTINUE
0037000         I1 = 1
0037100 810     I = 1
```

```
0037200 812   J = 1
0037300 813   K = 1
0037400 814   L = 1
0037500 815   I1 = I1 + 1
0037600       L = L + 1
0037700       IF (L .LE. N) GO TO 815
0037800       K = K + 1
0037900       IF (K .LE. N) GO TO 814
0038000       J = J + 1
0038100       IF (J .LE. N) GO TO 813
0038200       I = I +  1
0038300       IF (I .LE. NCPURP) GO TO 812
0038400       GO TO 850
0038500 C
0038600 C        LOOP WITH DO STATEMENT
0038700 C
0038800 999   CONTINUE
0038900       I1 = 1
0039000       DO 830 I = 1, NCPURP
0039100       DO 829 J = 1, N
0039200       DO 828 K = 1, N
0039300       DO 827 L = 1, N
0039400       I1 = I1 + 1
0039500 827   CONTINUE
0039600 828   CONTINUE
0039700 829   CONTINUE
0039800 830   CONTINUE
0039900 C
0040000 C        PAGING
0040100 C
0040200 1010   CONTINUE
0040300       DO 831 I=1,NCPURP
0040400       DO 832 J=1,1024
0040510 C
0040520 C     CHANGED BY R.ALEXANDER TO INCEASE PAGING
0040530 C      DO 832 K=1,6
0040540 C
0040550       DO 832 K=1,50
0040600       MATRX1(J,K) = 1
0040700 832   MATRX2(J,K) = 0
0040800       DO 833 J=1,1024
0040820 C
0040910 C     CHANGED BY R.ALEXANDER TO INCEASE PAGING
0040920 C      DO 833 K=1,6
0040930 C
0040940       DO 833 K=1,50
0041000       MATRX1(J,K) = MATRX2(J,K)
0041100 833   MATRX2(J,K) = 1
0041200 831   CONTINUE
0041300 850   CONTINUE
0041400 C        END OF CPU LOOP
0041500 C
0041600 C        IF NO I/O REQUESTED, SKIP I/O SECTION
0041700 301   IF(NMAS .EQ. 0) GO TO 600
```

```
0041800 C
0041900 C
0042000 C        START OF I/O SECTION                                  ************
0042100 C
0042200 460   CONTINUE
0042300 C        WRITE DETAIL RECORDS
0042400       RSUM = SUM
0042500       DSUM = SUM
0042600       ICHK = LCHK
0042700       KCNT = KCNT+1
0042800       WRITE (3) LKEY, DSUM, LCHK, RECORD
0042900       READ (2) LKEY, DSUM, LCHK, RECORD
0043000       IF(RECORD(1) .EQ. 1) GO TO 500
0043100 C
0043200 C        WRITE MASTER
0043300 C                                                                  I/O LO
0043400 475   WRITE (4) MKEY, RSUM, MCHK, RECORD
0043500       READ (1) MKEY, RSUM, MCHK, RECORD
0043600       IF(RECORD(1) .EQ. 1) GO TO 600
0043700       GO TO 400
0043800 C
0043900 C        NO DETAILED RECORDS LEFT
0044000 500   LKEY = 999999
0044100       GO TO 475
0044200 C
0044300 C        NO MASTER RECORDS LEFT
0044400 C
0044500 600   CONTINUE
0044600 C        GET END TIME
0044700       CALL ZTIME(FENDTM)
0044800       TIMES (ICNT, 2) = FENDTM
0044900 C
0045000 C        END OF I/O SECTION                                    ************
0045100 C
0045200 C
0045300 C        END OF TIMED PASS                 **********************************
0045400 C
0045500 C        IF I/O SECTION HAS BEEN USED, CHECK FOR CORRECT OPERATION
0045600       IF((NMAS.EQ.0) .OR. (NDET.EQ.0)) GO TO 1
0045700       IF(ICHK - (KCNT*NRATO))700,1,700
0045800 700   WRITE(6,93) ICHK,ICNT,NRATO
0045900 C
0046000 C
0046100 1        CONTINUE
0046200 C
0046300 C
0046400 C        COMPUTE RESULTS
0046500 C
0046600       WRITE(6,97)
0046700       STIMES = 0.
0046800       SSTIME = 0.
0046900       DO 1100 ICNT = 1, NPASS
0047000       TIMEON = TIMES(ICNT, 1)
0047100       TIMEOF = TIMES(ICNT, 2)
```

```
0047200        DIFF = TIMECF - TIMECN
0047300        WRITE(6,99) TIMECN, TIMEOF, DIFF
0047400        STIMES = STIMES + DIFF
0047500        SSTIME = SSTIME + DIFF ** 2
0047600 1100   CONTINUE
0047700        TMEAN = STIMES / FLOAT(NPASS)
0047800        TSTDEV = SQRT((SSTIME / FLOAT(NPASS)) - TMEAN ** 2)
0047900        WRITE(6,98) TMEAN, TSTDEV
0048000 C         PUNCH INDIVIDUAL RUN TIMES IF REQUESTED
0048100        IF(PUNCH .EQ. 0) GO TO 1110
0048200        NUM = (NPASS + 3)/4
0048300        DO 1120 I = 1, NUM
0048400        IDONE = (I - 1) * 4
0048500        LEFT = MINO(NPASS-IDONE, 4)
0048600        I1 = IDONE + 1
0048700        I2 = IDONE + LEFT
0048800        WRITE (7, 85) ((TIMES(J1, J2), J2 = 1, 2), J1 = I1, I2)
0048900 1120   CONTINUE
0049000 C
0049100 C         GO GET NEXT CONTROL CARD
0049200 C
0049300 1110   REWIND 1
0049400        REWIND 2
0049500        REWIND 3
0049600        REWIND 4
0049700        GO TO 1000
0049800 C
0049900 C
0050000 9000   CONTINUE
0050100 C
0050200 C
0050300 C         PUT OUT TOTAL ELAPSED TIME
0050400 C
0050500 C
0050600        CALL ZTIME(TIMEF)
0050700        DIFF = TIMEF - TIMEN
0050800        WRITE(6,95) TIMEN, TIMEF, DIFF
0050900 C         PUNCH FINAL OUTPUT IF REQUESTED
0051000        IF(PUNCH .EQ. 0) GO TO 1130
0051100        WRITE (7, 86) NMAS, NDET, ITYPE, NCPURP, NPASS, PUNCH, RUN
0051200        WRITE (7, 84) TIMEN, TIMEF, DIFF
0051300 C
0051400 1130   CALL EXIT
0051500 C
0051600 C      FORMAT STATEMENTS
0051700 C
0051800 84     FORMAT (3F12.3)
0051900 85     FORMAT (8F10.3)
0052000 86     FORMAT (6H NMAS=, I7, 6H,NDET=, I7, 7H,ITYPE=, I2, 8H,NCPURP=,
0052100       1   I7, 7H,NPASS=, I2, 7H,PUNCH=, I1, 7H,RUNID=, A4)
0052200 87     FORMAT(24H1 SYNTHETIC BATCH STREAM)
0052300 88     FORMAT(6X, I7, 6X, I7, 7X, I2, 8X, I7, 7X, I2, 7X, I1, 7X, A4)
0052400 89     FORMAT(10H0 MASTER =,I7,4X,8HDETAIL =,I7,4X,19HCPU ACTIVITY TYPE =
0052500       1  ,I2,4X,17HCPU REPETITIONS =,I8,4X,8HPASSES =,I3,4X,
```

```
0052600      1   7HPUNCH =, I1, 4X, 7HRUNID =, A4)
0052700 90    FORMAT(38H  MORE DETAILS THAN MASTERS SPECIFIED.)
0052800 91    FORMAT(30H  NO CPU LOOPS SINCE NDET = 0.)
0052900 92    FORMAT(45H ITYPE WRONG -- EQUALS ZERO.  ITYPE SET TO 1  )
0053000 93    FORMAT(23H CHECKSUM ERROR, ICHK= ,I6,7H KCNT= ,I6,8H NRATC= ,I6)
0053100 94    FORMAT(15H SEQUENCE ERROR)
0053200 95    FORMAT(10HCON-TIME =,F10.3,4X,10HCFF-TIME =,F10.3,
0053300      1   4X,20HTOTAL ELAPSED TIME =,F10.3)
0053400 96    FORMAT(14H COMPLTE ERROR)
0053500 97    FORMAT(1HO,11X,5HSTART,11X,3HEND,12X,12HELAPSED TIME)
0053600 98    FORMAT(1H ,22X,19HMEAN ELAPSED TIME =,F10.3,
0053700      1   22H  STANDARD DEVIATION =,F10.3//)
0053800 99    FORMAT(1H , 8X, F10.3,  6X, F10.3,  7X, F10.3)
0053900       END
0054000       SUBROUTINE ZTIME(TME)
0054100 C
0054200 C     THIS SUBROUTINE CALLS THE SYSTEM TIMER FOR TIME OF DAY.  IT MUST
0054300 C     BE WRITTEN FOR THE PARTICULAR SYSTEM.  IT RETURNS THE TIME OF DAY
0054400 C     IN FLOATING POINT SECONDS
0054500 C
0054600       CALL DATIME(ITIME)
0054700       TME = FLOAT(ITIME) / 100.
0054800       RETURN
0054900       END
0055000       SUBROUTINE SUB1
0055100 C
0055200 C        THIS IS A DUMMY SUBROUTINE TO BE CALLED
0055300 C
0055400       X = Y
0055500       RETURN
0055600       END
0055700       SUBROUTINE SUB2
0055800 C
0055900 C        THIS IS A DUMMY SUBROUTINE TO BE CALLED
0056000 C
0056100       X = Y
0056200       RETURN
0056300       END
0056400       SUBROUTINE SUB3
0056500 C
0056600 C        THIS IS A DUMMY SUBROUTINE TO BE CALLED
0056700 C
0056800       X = Y
0056900       RETURN
0057000       END
0057100       SUBROUTINE SUB4
0057200 C
0057300 C        THIS IS A DUMMY SUBROUTINE TO BE CALLED
0057400 C
0057500       X = Y
0057600       RETURN
0057700       END
0057800       SUBROUTINE SUB5
0057900 C
```

```
0058000 C        THIS IS A DUMMY SUBROUTINE TO BE CALLED
0058100 C
0058200        X = Y
0058300        RETURN
0058400        END
0058500        SUBROUTINE SUB6(NCPURP, ARRAY, INDEX, ITYPE)
0058600 C
0058700 C        THIS SUBROUTINE MOVES DATA AROUND BETWEEN 1K BLOCKS.  THE
0058800 C        MODE OF MOVEMENT IS INDICATED BY THE PASSED VARIABLE ITYPE:
0058900 C        ITYPE = 5  MOVE SEQUENTIALLY BETWEEN CONTIGUOUS BLOCKS
0059000 C        ITYPE = 6  MOVE RANDOMLY BETWEEN CONTIGUOUS BLOCKS
0059100 C        ITYPE = 7  MOVE RANDOMLY BETWEEN NON-CONTIGUOUS BLOCKS
0059200 C
0059300 C        ALL BLOCKS ARE 1K WORDS LONG, ONE IS PASSED AND CALLED ARRAY,
0059400 C        ONE IS LOCAL AND CALLED ARRAY1, AND THE OTHER IS ALSO  LOCAL
0059500 C        AND CALLED ARRAY2
0059600 C        INDEX PROVIDES INDICES FOR RANDOM MOVES -- IT ACTUALLY PROVIDES
0059700 C        NON-RANDOM INDICES THAT JUMP AROUND IN A DATA BLOCK
0059800 C
0059900        DIMENSION ARRAY1(1000), ARRAY2(1000)
0060000        DIMENSION ARRAY(1000), INDEX(1000)
0060100        IF(ITYPE .NE. 5) GO TO 1000
0060200 C
0060300 C        MOVE WORDS SEQUENTIALLY BETWEEN CONTIGUOUS BLOCKS OF
0060400 C        1K WORDS
0060500 C
0060600        DO 201 III = 1, NCPURP
0060700        DO 200 I = 1, 1000, 5
0060800        ARRAY1(I) = ARRAY2(I)
0060900        ARRAY1(I+1) = ARRAY2(I+1)
0061000        ARRAY1(I+2) = ARRAY2(I+2)
0061100        ARRAY1(I+3) = ARRAY2(I+3)
0061200        ARRAY1(I+4) = ARRAY2(I+4)
0061300 200    CONTINUE
0061400 201    CONTINUE
0061500        GO TO 5000
0061600 C
0061700 1000   IF(ITYPE .NE. 6) GO TO 2000
0061800 C
0061900 C        MOVE WORDS RANDOMLY BETWEEN CONTIGUOUS BLOCKS
0062000 C
0062100        DO 1201 III = 1, NCPURP
0062200        DO 1200 I = 1, 1000
0062300        J = INDEX(I)
0062400        ARRAY1(I) = ARRAY2(J)
0062500 1200   CONTINUE
0062600 1201   CONTINUE
0062700        GO TO 5000
0062800 C
0062900 2000   IF(ITYPE .NE. 7) GO TO 3000
0063000 C
0063100 C
0063200 C        MOVE WORDS RANDOMLY BETWEEN NON-CONTIGUOUS BLOCKS
0063300 C
```

```
0063400        DO 2201 III = 1, NCPURP
0063500        DO 2200 I = 1, 1000
0063600        J = INDEX(I)
0063700        ARRAY2(I) = ARRAY(J)
0063800 2200   CONTINUE
0063900 2201   CONTINUE
0064000        GO TO 5000
0064100 C
0064200 C         SOMETHING IS WRONG
0064300 C
0064400 3000   WRITE(6, 11) ITYPE
0064500 11     FORMAT (1H , 28HCPU MOVE TYPE IS WRONG --     , I5)
0064600        STOP 8
0064700 5000   RETURN
0064800        END
0064900 //*LKED.SYSLMOD DD DSN=&SYSLMOD,DISP=&LMODISP,UNIT=,SPACE=
0065000 //L.SYSLIN DD DSN=&OBJSET,DISP=(OLD,DELETE)
0065100 //  DD DSN=&ASS,DISP=(OLD,DELETE)
0065200 //*LKED.SYSIN DD DSN=&&SYSGO,DISP=(OLD,DELETE)
0065300 /*              END OF JOB
```

Appendix D

MVS

LIMIT VALUES

and

IPS MEMBERS

LIMIT VALUES and IPS-MEMBERS

Configuration	MIX - RUN		TSO-ONLY RUN	
	LIMIT Value	IPS-Member No.	LIMIT Value	IPS-Member No.
1	5	5	7	4
2	4	6	7	4
3	5	5	7	4
4	10	5	∞	4
5	2	8	3	4

Appendix E

MVS

IPS - MEMBERS

```
*********************************************************************
*    IEAIPS04    *
*********************************************************************


 CPU=9.9,IOC=5.0,MSO=1.0
WKL=(1,4,7,12,17,22)
OBJ=1,SRV=(400,400,400,400,400,400)
OBJ=2,SRV=(400,300,*,*,*,0)
OBJ=3,SRV=(400,300,*,0,0,0)
OBJ=4,SRV=(400,300,0,0,0,0)
OBJ=5,SRV=(400,100,*,*,*,0)
OBJ=6,SRV=(400,100,*,*,0,0)
OBJ=7,SRV=(400,100,*,0,0,0)
OBJ=8,SRV=(2000,*,*,*,*,0)
PGN=1,(OBJ=8,ISV=999K,RTB=0)
PGN=2,(OBJ=5,DUR=5,ISV=150,RTB=0,UNT=R)
      (OBJ=7,ISV=300,RTB=1)


 *********************************************************************
*    IEAIPS05    *
*********************************************************************


 CPU=9.9,IOC=5.0,MSO=1.0
WKL=(1,4,7,12,17,22,27)
OBJ=1,SRV=(400,400,400,400,400,400)
OBJ=2,SRV=(400,300,*,*,*,0)
OBJ=3,SRV=(400,300,*,0,0,0)
OBJ=4,SRV=(400,300,0,0,0,0)
OBJ=5,SRV=(400,100,*,*,*,0)
OBJ=6,SRV=(400,100,*,*,0,0)
OBJ=7,SRV=(400,100,*,0,0,0)
OBJ=8,SRV=(2000,*,*,*,*,*,0)
PGN=1,(OBJ=8,ISV=999K,RTB=0)
PGN=2,(OBJ=5,DUR=2,ISV=150,RTB=0,UNT=R)
      (OBJ=7,ISV=300,RTB=1)


 *********************************************************************
```

```
*********************************************************************
*    IEAIPS06    *
*********************************************************************


 CPU=9.9,IOC=5.0,MSO=1.0
WKL=(1,4,7,12,17,22,32)
OBJ=1,SRV=(400,400,400,400,400,400)
OBJ=2,SRV=(400,300,*,*,*,0)
OBJ=3,SRV=(400,300,*,0,0,0)
OBJ=4,SRV=(400,300,0,0,0,0)
OBJ=5,SRV=(400,100,*,*,*,0)
OBJ=6,SRV=(400,100,*,*,0,0)
OBJ=7,SRV=(400,100,*,0,0,0)
OBJ=8,SRV=(2000,*,*,*,*,*,0)
PGN=1,(OBJ=8,ISV=999K,RTB=0)
PGN=2,(OBJ=5,DUR=2,ISV=150,RTB=0,UNT=R)
      (OBJ=7,ISV=300,RTB=1)


 *********************************************************************
*    IEAIPS08    *
*********************************************************************


 CPU=9.9,IOC=5.0,MSO=1.0
WKL=(1,4,7,12,17,22,100)
OBJ=1,SRV=(400,400,400,400,400,400)
OBJ=2,SRV=(400,300,*,*,*,0)
OBJ=3,SRV=(400,300,*,0,0,0)
OBJ=4,SRV=(400,300,0,0,0,0)
OBJ=5,SRV=(400,100,*,*,*,0)
OBJ=6,SRV=(400,100,*,*,0,0)
OBJ=7,SRV=(400,100,*,0,0,0)
OBJ=8,SRV=(2000,*,*,*,*,*,0)
PGN=1,(OBJ=8,ISV=999K,RTB=0)
PGN=2,(OBJ=5,DUR=2,ISV=150,RTB=0,UNT=R)
      (OBJ=7,ISV=300,RTB=1)


 *********************************************************************
```

Appendix F

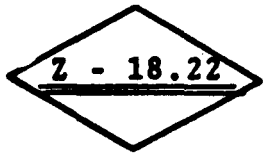
MVS and TSS

PATCHES

F.1 LIMIT OF CONCURRENT TSO-USERS

```
//
//
//LIMITIN JOB 02050,'SEE SECTION 3.1',MSGLEVEL=1
//ZAP EXEC PGM=AMASPZAP
//SYSPRINT DD SYSOUT=A
//SYSLIB DD DSN=SYS1.NUCLEUS,DISP=SHR
//SYSABEND DD SYSOUT=A
//SYSIN DD *
 NAME IEANUC02 IRARMCTL
* LIMIT NUMBER OF CONCURRENT TSO ADDRESS SPACES IN IN QUEUE.
 VER 050A 58504020,58105094 * L ASCBPTR,OUCBASCB(,OUCBPTR) L R1,ASCBOUXB
 VER 0ADC 00000000,00000000 * IRAPTCTL = PATCH AREA DC 30A(0)
 VER 0B1C 00000000 * END OF PATCH
 REP 050A 47F0CADA * B IRAPTCTL
 REP 0ADC 91204012,4780CB06 * TM OUCBYFL(OUCBPTR),OUCBLOG.BZ RETURN
 REP 0AE4 58502078,41100003 * L '5,RMCTINQE(,RMCTPTR) LA '1,TREE
* N O T E  LA '1,TREE SPECIFIES THE NUMBER OF CONCURRENT TSO AS'S
* OUCBLOOP DS 0H
 REP 0AEC 58505008,91205012 * L '5,OUCBBCK(,'5) TM OUCBYFL('5),OUCBLOG
 REP 0AF4 4780CAFE,4610CAFE * BZ NOLOGTYP BCT '1,FINDMORE
 REP 0AFC 47F0CB0E * B NOMORLOG
* NOLOGTYP FINDMORE DS 0H
 REP 0B00 55502078,4770CAEA * CL '5,RMCTINQE(,RMCTPTR) BNE OUCBLOOP
* RETUTN DS 0H
 REP 0B06 58504020,47F0C50C * L ASCBPTR,OUCBASCB(,OUCBPTR) B TO MAIN-LIN
* NOMORLOG DS 0H
 REP 0B10 58502084,5E5022CC * L '5,RMCTTOD),RMCTPTR) AL '5,RRCTTMN(,RMCT
 REP 0B18 5050403C,47F0CB06 * ST '5,OUCBTMF(,OUCBPTR) B RETURN
* EOZ
 DUMP IEANUC02 IRARMCTL
/*
```

F.2 PATCH OF SWAPPING ALGORITHM



STEAL MAXIMUM AT SWAPOUT TIME

```
NAME     IEANUC01      IRARMSTM
VER      0050      91013009
VER      0DF0      00000000
REP      0050      45E0CDEE
REP      0DF0      58605094,1B77,40706032,91013009,07FE
```

```
CQUALIFY $RM
CSET $DOUT=$IO(002)
CSET CHBSTE.(X'20'*X'37'+8,2)=X'0030'
CSET CHBSTE.(X'20'*X'38'+8,2)=X'0050'
CSET CHBSTE.(X'20'*X'39'+8,2)=X'0060'
CSET CHBSTE.(X'20'*X'3A'+8,2)=X'0080'
CSET CHBSTE.(X'20'*X'3B'+8,2)=X'00A0'
CSET CHBSTE.(X'20'*X'3C'+8,2)=X'0020'
CSET CHBSTE.(X'20'*X'3D'+8,2)=X'0040'
CSET CHBSTE.(X'20'*X'3E'+8,2)=X'0060'
CSET CHBSTE.(X'20'*X'3F'+8,2)=X'0080'
CSET CHBSTE.(X'20'*X'40'+8,2)=X'00A0'
```

System Table Parameters

```
CSET CHBSYS.(X'0A',2)=X'0020'          PREJUDICE LEVEL 1
CSET CHBSYS.(X'12',2)=X'0030'          PREJUDICE LEVEL 2
CSET CHBSYS.(X'1C',2)=X'0040'          PREJUDICE LEVEL 3
CSET CHBSYS.(X'1E',2)=X'0050'          PREJUDICE LEVEL 4
CSET CHBSYS.(X'6E',2)=X'0064'              SYSBUF
CSET CHBSYS.(X'C8',2)=X'002E'          MAX SHARED PAGES TO PURGE
CSET CHBSYS.(X'D8',4)=X'015C0120'      SYSMXD AND SYSMND
CSET CHBSYS.(X'18A',1)=X'03'               SYSPMT
CSET CHBSYS.(X'1C4',4)=X'00030003'     BLOCK PAGE SIZE
CSET CHBSYS.(X'CA',2)=X'005A'          SHR PAGES SCAN THRESHOLD
CSET CHBSYS.(X'16C',4)=X'00780030'      SHR PAGE IN CORE MAX-MIN
CSET CHBSYS.(X'184',4)=X'00200000'     TSEND DELAY = 2SECONDS
CSET CHBSYS.(X'C6',2)=X'7FFF'          NOP BIG TASK
CSET CHBSYS.(X'24',2)=X'2802'          SHARED PAGE MIGRATION DELTAS
```

Locking Fix

```
CSET CEAKTO.(X'8DC',4)=X'01E84800'     32 SECOND LOCK TIMEOUT
CSET CEAAQC.(X'3B8',4)=X'07004700'
CSET CEAHQP.(X'2BE',4)=X'47F00F00'     RESET WAITING ON LOCK
CSET L'F00'.(,10)=X'5000B038470000000700'  RESET WAITING ON LOCK
CSET L'F0A'.(,8)=X'94BFB0569680B056'   RESET WAITING ON LOCK
CSET L'F12'.(,8)=X'9640B06247F0718C'   RESET WAITING ON LOCK
CSET CEAHQP.(X'3D0',4)=X'00030D40'     LOCK EXTENSION

CSET CEDMO2C.(X'111E',2)=X'4700'       TURN OFF BREAK CCWS FOR TAM 11

CSET CEDMO2C.(C'B98',2)=X'9220'        TPDRIVER
CSET CEDMO2C.(X'B9C',2)=X'47F0'        FORCE PHYSICAL DISCONNECT
CSET CEDLO2C.(X'134',1)=X'00'          FORCE PHYSICAL DISCONNECT
CSET CEDLO2C.(X'2B5',1)=X'CC'          -TURNS OFF LOGON
CSET CEATCC.(X'6CE',4)=X'47F0B230'     -UNIT EXCEPTION
CSET BASREP =X'FF'
CQUALIFY $VM
CSET CZAYDC.(X'A08',4)=X'4190D450'  FIX MONIT ON...SCA BASE REG        3066 Bug
CSET CHBTDT.(X'390',1)=X'71'        SET SYSVCT TO VISAM
CSET $VM.CZCMD1.(,4)=X'1BFF07FE'    NOP PRINTER BUFFER LOAD
CQUALIFY $RM
CDISPLAY C'TAM11 RIDES AGAIN
CRUN
```

Appendix G

MVS

EXTERNAL STORAGE

and

DATASET DISTRIBUTION

G.1 Data Space Distribution for MVS

Configuration	Drum 1 (channel 1)	Drum 2 (channel 1)		1-Drive 3330-1 (channel 7)	
	TS-Only and MIX	TS-Only	MIX	TS-Only	MIX
1	2 User Paging DS	-	-	PLPA DS	PLPA DS
2	"	1 User Paging DS	PLPA DS	PLPA DS	1 User Paging DS
3	"	-	-	"	"
4	"	-	-	"	"
5	"	PLPA DS	PLPA DS	1 User Paging DS	1 User Paging DS

In Addition the following drives were used (on channel 7 unless otherwise stated):

2 x 3330-11 System + SPOOL

4 x 3330-1 USER STORAGE (TSO) (2 of them on channel 2 for configuration 3)

4 x 3330-1 USER PAGING (3 of them on channel 2 for configuration 3)

1 x 3330-1 SOURCE, LOAD LIBRARIES, USER CATALOG (on channel 2 for configuration 3)

Appendix H

TSS

SCHEDULE TABLE

H.1 SCHEDULE TABLE

```
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
///// USERID=INGEBEE*, BSN=0502, DSNAME=SOURCE.CHBST
*
*         CHBST    TSS/370    RELEASE 1.0
*
          TITLE  'TSS/370 TABLE DRIVEN SCHEDULER'
          EJECT
CHBSTE CSECT
***********************************************************************
*
*       THE PREJUDICE FLAG HAS BEEN REDEFINED TO MEAN. IF IT IS ON(SET
*       TO ONE) PREJUDICING WILL TAKE PLACE. IF IT IS OFF (SET TO ZERO
*       ) PREJUDICING WILL NOT TAKE PLACE. THE SCHEDULER ALSO LOOKS IN
*       NEXT LEVEL TO BE USED AT TIME SLICE END TO TEST THE FLAGS STAT
*       US AND NOT IN THE CURRENT LEVEL AS WAS THE CASE UNTIL PTF18
*
***********************************************************************
*
*
*     EXTERNAL JOIN PRIORITY THREE IS AN EXPRESS MODE PRIORITY.USERS
*     MAY WANT ADD A CHANGE LEVEL ROUTINE WHICH DOES A CHANGE TO LEVEL
*     3 TO GIVE CERTAIN TYPES OF WORK PRIOITY.
*     THE PULSE LEVELS ARE DESIGNED FOR  EDITORS LIKE REDIT.
*
***********************************************************************
*     CAUTION SHOULD BE USED BEFORE MODIFING THIS TABLE SINCE ALL
*     SCHEDULING OPTIONS ARE USED. YOU MUST ALSO TAKE INTO ACCOUNT THE
*     IMPACT OF THE AUTOMATIC INDEXING DONE BY PREJUDICE LEVELS
***********************************************************************
*
         ENTRY CHBSTLN         BASE FOR LEVEL USAGE COUNTERS   WJD
*     L P T  Q D M   M   M   S P A   T M A T F H L W C L D N D   R
*     E R S  T T R   X   X   T U T   S P W W L L L L W C K S S   S
*     V I V  A R Q   C   R     L X   E R T T G K K K O F I L H   V
*     SYSOPERO FIRST TIME SLICE
 DC X'000300980600002000200040500000007476747 4A0B9B97A7475747500000000'
*     LOGON EXTENSION
 DC X'0115004C10010020002000604B42000024263218303737 3C2D01002600000000'
*     LOGON EXTENSION
 DC X'0215004C1001002000200060 4B420000242632183037373C2D02002600000000'
*     INTERACTIVE EXPRESS FIRST TIME SLICE
 DC X'0313004C01010020001800304B6B00004B494B039059595E544C4B4900000000'
*     LOGON EXTENSION
 DC X'0415004C10010020002000604B420000242632183037373C2D04002600000000'
*     LOGON EXTENSION
 DC X'0515004C10010020002000604B420000242632183037373C2D05002600000000'
*     LOGON EXTENSION
 DC X'0615004C10010020002000604B420000242632183037373C2D06002600000000'
*     LOGON EXTENSION
 DC X'0715004C10010020002000604B420000242632183037373C2D07002600000000'
*     LOGON EXTENSION
 DC X'0813004C10010020006000604B42000080808183008080808080008000000000'
*     LOGON EXTENSION
 DC X'0915004C10010020002000604B420000242632183037373C2D09002600000000'
*     BULKIO FIRST TS
 DC X'0A04004C0300002000200040500A00007F817F7F9085858A7F807F8000000000'
*    BATCH - READER/WRITER BASE LEVEL(KFA)
 DC X'0B15004C0E0000200030006054 0B012F1D1D1D1D801D1D1D1D1D001D00000000'
*    BATCH FIRST TS
 DC X'0C15004C0EFF0020003000605408012F8F8F8F8F809A9A9F8F908F0000000000'
```

```
*      BATCH - VIADUCT FIRST LEVEL(KFA)                                  02
 DC X'0D13004C0E17002000300060540D012FA4A6A4A480AFAFB4A4A5A4AC00000000' 02
*      BATCH   FIRST TIME SLICE                                          02
 DC X'0E15004C0EFF002000300060540E012F8F8F8F8F809A9A9F8F908F0000000000' 02
*      BATCH FIRST TIME SLICE                                            02
 DC X'0F15004C0EFF002000300060540F012F8F8F8F8F809A9A9F8F908F0000000000' 02
*      BATCH FIRST TIME SLICE                                            02
 DC X'1015004C0EFF002000300060541O012F8F8F8F8F809A9A9F8F908F0000000000' 02
*      BATCH FIRST TIME SLICE                                            02
 DC X'1115004C0EFF002000300060541101 2F8F8F8F8F809A9A9F8F908F0000000000' 02
*      BATCH FIRST TIME SLICE                                            02
 DC X'1215004C0EFF002000400080541201 2F8F8F8F8F809A9A9F8F908F0000000000' 02
*      BATCH FIRST TIME SLICE                                            02
 DC X'1315004C0EFF002000300060541301 2F8F8F8F8F809A9A9F8F908F00000000C0' 02
*      LOGON (WARNING SYSTEM HAS BUILTIN CHANGE TO THIS LEVEL)           02
 DC X'1413004C0301002000400050541401 2F1419141490191919141414140000000' 02
*      LOGOFF (WARNING SYSTEM HAS A BUILTIN CHANGE TO THIS LEVEL)        02
 DC X'1515004C0301002000200040541501 2F151A1515901A1A1A1515151500000000' 02
*      OLTS SCOPE LOOP ( SYSTEM HAS A BUILTIN CHANGE TO THIS LEVEL)      02
 DC X'1605004C0401002000320064321601 4E161616169016161616161616000000000' 02
*      INITIAL MTT (RESERVED FOR MTT ENTRY LEVEL)                        02
 DC X'1714004C2001002000100020506601 2F6667666690666666666666700000000' 03
*      INTERACTIVE 1ST TIME SLICE                                        03
 DC X'1814003001010020002000305042001 0A0242532189037373C2D180000000000000' 03
*     LOGON SCAFFOLD A SECOND TS LEVEL                                   03
 DC X'1913004C0401002000500060481901 2F1919191980191919191919190000000' 03
*     LOGOFF SCAFFOLD A SECOND TS LEVEL                                  03
 DC X'1A15004C0401002000500060481A01 2F1A1A1A1A801A1A1A1A1A1A1A000000000' 03
*      RESERVED FOR IBM                                                  03
 DC X'1B0000000000000000000000000000000000000000000000000000000000000000' 03
*      RESERVED FOR IBM                                                  03
 DC X'1C0000000000000000000000000000000000000000000000000000000000000000' 03
*      BATCH - READER/WRITER - 32 -(KFA)                                 03
 DC X'1D13004C0401002000200040481D01 2F1E1E1D1D301E1E1D1D1D001E000000000' 03
*      BATCH - READER/WRITER - 40 -(KFA)                                 03
 DC X'1E13004C0401002000280050481E01 2F1D1F1D1D201E1E1E1E1E001F000000000' 03
*      BATCH - READER/WRITER - 64 -(KFA)                                 03
 DC X'1F13004C0401002000400080501F01 2F1D1F1D1D001F1F1F1F1F001F000000000' 03
*      RESERVED FOR CUSTOMER USE                                         03
 DC X'2000000000000000000000000000000000000000000000000000000000000000' 03
*      RESERVED FOR CUSTOMER USE                                         03
 DC X'2100000000000000000000000000000000000000000000000000000000000000' 03
*      UNUSED                                                            03
 DC X'2200000000000000000000000000000000000000000000000000000000000000' 03
*      UNUSED                                                            03
 DC X'2300000000000000000000000000000000000000000000000000000000000000' 03
*      INTERACTIVE DELAY   24                                            04
 DC X'2415004C1017002000180030484200002425321861373 73C2D24002500000000' 04
*      INTERACTIVE DELAY   48                                            04
 DC X'2515004C0823002000300060484200002426321860373 73C2D25002600000000' 04
*      INTERACTIVE DELAY   64                                            04
 DC X'2615004C0438002000400080484200002427321860373 73C2D26002700000000' 04
*      INTERACTIVE DELAY   80                                            04
 DC X'2715004C0348002000500A0484200002428321860373 73C2D27002800000000' 0
*      INTERACTIVE DELAY   112                                           04
 DC X'2820004C0668002000700 0E0484200002429321860373 73C2D28002900000000' 0
*      INTERACTIVE DELAY   144                                           04
 DC X'2920004C0390002000900120484200002429321840373 73C2D29000000000000' 04
*      UNUSED                                                            04
 DC X'2A0000000000000000000000000000000000000000000000000000000000000000' 04
```

```
*     UNUSED                                                                    04
 DC X'280000000000000000000000000000000000000000000000000000000000000000' 04
*     UNUSED                                                                    04
 DC X'2C0000000000000000000000000000000000000000000000000000000000000000' 04
*     INTERACTIVE WRITE   16                                                    04
 DC X'2D15004C1001002000100020 4B42000024243218913737 3C2D24000000000000' 04
*     INTERACTIVE WRITE   32                                                    04
 DC X'2E15004C0805002000200040 4B42000024253218803737 3C2D25000000000000' 04
*     INTERACTIVE WRITE   48                                                    04
 DC X'2F15004C0405002000300060 4B42000024263218803737 3C2D26000000000000' 04
*     INTERACTIVE WRITE   64                                                    04
 DC X'3015004C030A002000400080 4B42000024273218803737 3C2D27000000000000' 04
*     INTERACTIVE WRITE   80                                                    04
 DC X'3115004C030F002000500A04 B42000024283218803737 3C2D28000000000000' 05
*     INTERACTIVE AWAIT   16                                                    05
 DC X'3215004C1017002000100020 4B42012F32333218213737 3C2D32003300000000' 05
*     INTERACTIVE AWAIT   32                                                    05
 DC X'3315004C0823002000200040 4B42012F32343218203737 3C2D33003400000000' 05
*     INTERACTIVE AWAIT   48                                                    05
 DC X'3415004C0438002000300060 4B42012F32353218203737 3C2D34003500000000' 05
*     INTERACTIVE AWAIT   64                                                    05
 DC X'3515004C0348002000400080 4B42012F32363218203737 3C2D35003600000000' 05
*     INTERACTIVE AWAIT   80                                                    05
 DC X'3615004C0358002000500A04 B42012F32363218003737 3C2D36000000000000' 05
*     INTERACTIVE HOLD LOCK 16                                                  05
 DC X'3715004C1001002000180030 4B42012F24253218813737 3C2D37000000000000' 05
*     INTERACTIVE HOLD LOCK 32                                                  05
 DC X'3815004C0801002000280050 4B42012F24263218803737 3C2D38000000000000' 05
*     INTERACTIVE HOLD LOCK 48                                                  05
 DC X'3915004C0405002000300060 4B42012F24273218803737 3C2D39000000000000' 05
*     INTERACTIVE HOLD LOCK 64                                                  05
 DC X'3A15004C030A002000400080 4B42012F24283218803737 3C2D3A000000000000' 05
*     INTERACTIVE HOLD LOCK 80                                                  05
 DC X'3B15004C030F002000500A04 B42012F24293218803737 3C2D3B000000000000' 05
*     INTERACTIVE WAIT ON LOCK 16                                               05
 DC X'3C15004C1001002000100020 4B42000024253218013737 3C2D3C000000000000' 05
*     INTERACTIVE WAIT ON LOCK 32                                               05
 DC X'3D15004C0801002000200040 4B42000024263218003737 3C2D3D000000000000' 05
*     INTERACTIVE WAIT ON LOCK 48                                               06
 DC X'3E15004C0401002000300060 4B42000024273218003737 3C2D3E000000000000' 06
*     INTERACTIVE WAIT ON LOCK 64                                               06
 DC X'3F15004C0301002000400080 4B42000024283218003737 3C2D3F000000000000' 06
*     INTERACTIVE WAIT ON LOCK 80                                               06
 DC X'4015004C0301002000500A04 B42000024293218003737 3C2D40000000000000' 06
*     INTERACTIVE PULSE - 16 -(RESEARCH EDITOR)                                 06
 DC X'4115002001010020001000 204B42012F41423218213737 3C2D41414200000000' 06
*     INTERACTIVE PULSE - 24 -(REAEARCH EDITOR)                                 06
 DC X'4215004C0820002000140030 4B42012F41433218203737 3C2D42424300000000' 06
*     INTERACTIVE PULSE - 25 -(RESEARCH EDITOR)                                 06
 DC X'4315004C0838002000180032 4B42012F41443218203737 3C2D43434400000000' 06
*     INTERACTIVE PULSE - 26 -(RESEARCH EDITOR)                                 06
 DC X'4415004C0840002000 1C0034 4B42012F41453218203737 3C2D44444500000000' 06
*     INTERACTIVE PULSE - 27 -(RESEARCH EDITOR)                                 06
 DC X'4515004C0848002000200036 4B42012F41453218003737 3C2D45454500000000' 06
*     UNUSED                                                                    06
 DC X'460000000000000000000000000000000000000000000000000000000000000000' 06
*     UNUSED                                                                    06
 DC X'470000000000000000000000000000000000000000000000000000000000000000' 06
*     UNUSED                                                                    06
 DC X'480000000000000000000000000000000000000000000000000000000000000000' 06
```

```
*      EXPRESS SECOND TIME SLICE                                                06
 DC X'4913004C0300002000200040546B00004B4A4B038059595E544B4B4A00000000' 06
*      EXPRESS 3RD TIME SLICE                                                   06
 DC X'4A13004C0300002000300060646B00004B4E4B038059595E544B4B4A00000000' 06
*      EXPRESS DELAY 16                                                         07
 DC X'4B13004C1005002000100020506B00004B514B038159595E544C4B5100000000' 07
*       EXPRESS DELAY 32                                                        07
 DC X'4C13004C080A002000200040506B00004B524B038159595E544C4B5200000000' 07
*      EXPRESS DELAY  48                                                        07
 DC X'4D13004C040F002000300060546B00004B534B038059595E544C4B5300000000' 07
*      EXPRESS DELAY  64                                                        07
 DC X'4E13004C031400200040008O5A6B00004BBF4B038059595E544C4BBF00000000' 07
*      EXPRESS DELAY  80                                                        07
 DC X'4F13004C031900200050008O5A6B00004B504B038059595E544C4BBF00000000' 07
*      EXPRESS DELAY  80                                                        07
 DC X'5013004C031900200050008O5A6B00004B504B038059595E544C4BBF00000000' 07
*      EXPRESS GROW 32                                                          07
 DC X'5113004C0300002000200040646B00004B4D4B038059595E544C4B5100000000' 07
*      EXPRESS GROW 48                                                          07
 DC X'5213004C0300002000300060646B00004B4E4B038059595E544C4B5200000000' 07
*      EXPRESS GROW 64                                                          07
 DC X'5313004C0300002000400080646B00004BBF4B038059595E544C4B5300000000' 07
*      EXPRESS WRITE 16                                                         07
 DC X'5413004C1001002000100020506B00004B514B039159595E544C4B5100000000' 07
*      EXPRESS WRITE 32                                                         07
 DC X'5513004C0805002000200040506B00004B524B038059595E544C4B5200000000' 07
*      EXPRESS WRITE 48                                                         07
 DC X'5613004C0405002000300060546B00004B534B038059595E544C4B5300000000' 07
*      EXPRESS WRITE 64                                                         07
 DC X'5713004C030A002000400080SA6B00004B4E4B038059595E544C4BBF00000000' 07
*      EXPRESS WRITE 80                                                         0E
 DC X'5813004C030F002000500080SA6B00004BBF4B038059595E544C4BBF00000000' 08
*      EXPRESS HOLDING LOCK 16                                                  08
 DC X'5913004C1001002000100020506B00004B514B03814B4B5E544C4B5100000000' 08
*      EXPRESS HOLDING LOCK 32                                                  0E
 DC X'5A13004C0801002000200040506B00004B524B03804B4B5E544C4B5200000000' 08
*      EXPRESS HOLDING LOCK 48                                                  0E
 DC X'5B13004C0405002000300060546B00004B534B03804B4B5E544C4B5300000000' 08
*      EXPRESS HOLDING LOCK 64                                                  08
 DC X'5C13004C030A002000400080SA6B00004B4E4B03804B4B5E544C4BBF00000000' 08
*      EXPRESS HOLDING LOCK 80                                                  0E
 DC X'5D13004C030F002000500080SA6B00004B4F4B03804B4B5E544C4BBF00000000' 08
*      EXPRESS WAIT FOR LOCK 16                                                 08
 DC X'5E13004C1017002000100020506B00004B514B038159595E544C4B5100000000' 08
*      EXPRESS WAIT FOR LOCK 32                                                 08
 DC X'5F13004C0817002000200040506B00004B524B038059595E544C4B5200000000' 08
*      EXPRESS WAIT FOR LOCK 48                                                 08
 DC X'6013004C0420002000300060546B00004B534B038059595E544C4B5300000000' 08
*      EXPRESS WAIT FOR LOCK 64                                                 08
 DC X'6113004C0340002000400080SA6B00004B4E4B038059595E544C4BBF00000000' 08
*      EXPRESS WAIT FOR LOCK 80                                                 08
 DC X'6213004C0340002000500080SA6B00004BBF4B038059595E544C4BBF00000000' 08
*        UNUSED                                                                 08
 DC X'6300000000000000000000000000000000000000000000000000000000000000' 08
*        UNUSED                                                                 08
 DC X'6400000000000000000000000000000000000000000000000000000000000000' 09
*        UNUSED                                                                 09
 DC X'6500000000000000000000000000000000000000000000000000000000000000' 09
*      MTT 16                                                                   09
 DC X'6614004C2001002000100020506612F6667666691666666666666700000000' 09
```

```
*       MTT 32
 DC X'6714004C18010020002000405067012F66686666A066666666666666800000000'
*       MTT 48
 DC X'6814004C1001002000300060486801 2F66696666A066666666666666900000000'
*       MTT 64
 DC X'6914004C1007002000300060486901 2F666A6666A06666666666666A00000000'
*       MTT 64
 DC X'6A14004C1009002000400080486A012F666A6666A06666666666666A00000000'
*       EXPRESS PULSE 24
 DC X'6B13004C0300002000180030486B00006C6E6B03A159595E544C6C6F00000000'
*       EXPRESS PULSE TIME
 DC X'6C13004C0801002000180030486B00006C6E6C038159595E544C6C6F00000000'
*       EXPRESS PULSE TIME
 DC X'6D13004C0801002000180030486B00006C6E6C038059595E544C6C6F00000000'
*       EXPRESS PULSE SPACE
 DC X'6E13004C0801002000180030486B00006C6E6C038059595E544C6C6F00000000'
*       EXPRESS STEAL 1
 DC X'6F13004C0800002000180030486B00006C6E6C03A059595E544C6C7000000000'
*       EXPRESS STEAL 2
 DC X'7013004C0800002000180030486B00006C6E6C03A059595E544C6C7100000000'
*       EXPRESS STEAL 3
 DC X'7113004C0800002000180030486B00006C6E6C03A059595E544C6C7200000000'
*       EXPRESS STEAL 4
 DC X'7213004C080000200018003064 6B00006C6E6C03A059595E544C6C7200000000'
*       LABEL
 DC X'7305009804010020005000A04C73012F73737300A07373737373737300000000'
*       OPERATOR DELAY 24
 DC X'7405004C1001002000180040487401 2F74757474B1B9B97A7474007500000000'
*       OPERATOR DELAY 32
 DC X'7505004C0801002000200050487501 2F74767474A0B9B97A7475007600000000'
*       OPERATOR DELAY 40
 DC X'7605004C0405002000280060487601 2F74777474A0B9B97A7476007700000000'
*       OPERATOR DELAY 64
 DC X'7705004C030A002000400080487701 2F74787474A0B9B97A7477007800000000'
*       OPERATOR DELAY 80
 DC X'7805004C030A0020005000A0487801 2F74797474A0B9B97A7478007900000000'
*       OPERATOR DELAY 80
 DC X'7905004C030A0020005000A0487901 2F747974748 0B9B97A7479000000000000'
*       OPERATOR WAITING ON LOCK 16
 DC X'7A05004C10170020001800305 07A000074757475 81B9B97A7475747500000000'
*       OPERATOR WAITING ON LOCK 32
 DC X'7B05004C08170020002800505 07B000074767475 80B9B97A7475747500000000'
*       OPERATOR WAITING ON LOCK 48
 DC X'7C05004C04400020003000605 07C000074777475 80B9B97A7475747600000000'
*       OPERATOR WAITING ON LOCK 64
 DC X'7D05004C034000200040008 05A7D000074787475 80B9B97A7475747700000000'
*       OPERATOR WAITING ON LOCK 80
 DC X'7E05004C03400020005000A05A7E000074797475 80B9B97A7475747800000000'
*       BULKIO DELAY 16
 DC X'7F04004C1001002000180030487F00007F807F80A185858A7F807F8000000000'
*       BULKIO DELAY 32
 DC X'8004004C0801002000200040488000007F817F80A185858A7F807F8100000000'
*       BULKIO DELAY 48
 DC X'8104004C0405002000300060508100007F827F808085858A7F807F8100000000'
*       BULKIO DELAY 64
 DC X'8204004C030A00200040008 05A8200007F837F808085858A7F807F8200000000'
*       BULKIO DELAY 80
 DC X'8304004C030A0020005000A05A8300007F847F808085858A7F807F8300000000'
*       BULKIO DELAY 80
 DC X'8404004C030A0020005000A05A8400007F847F808085858A7F807F8400000000'
```

```
*     BULKIO HOLDING LOCK 16                                                    11
 DC X'8504004C1001002000180030508500007F807F808185858A7F807F8000000000' 11
*     BULKIO HOLDING LOCK 32                                                    11
 DC X'8604004C0801002000280050508600007F817F808085858A7F807F8000000000' 11
*     BULKIO HOLDING LOCK 48                                                    11
 DC X'8704004C0405002000300060508700007F827F808085858A7F807F8100000000' 11
*     BULKIO HOLDING LOCK 64                                                    11
 DC X'8804004C0305002000400080 5A8800007F837F808085858A7F807F8200000000' 11
*     BULKIO HOLDING LOCK 80                                                    11
 DC X'8904004C0305002000500 0A05A8900007F847F808085858A7F807F8200000000' 11
*     BULKIO WAITING FOR LOCK 16                                                11
 DC X'8A04004C1017002000180030508A00007F807F808185858A7F807F8000000000' 11
*     BULKIO WAITING FOR LOCK 32                                                11
 DC X'8B04004C0817002000280050508B00007F817F808085858A7F807F8000000000' 11
*     BULKIO WAITINT FOR LOCK 48                                                12
 DC X'8C0400 4C0440002000300060508C00007F827F808085858A7F807F8100000000' 12
*     BULKIO WAITING FOR LOCK 64                                                12
 DC X'8D04004C0340002000400080 5A8D00007F837F808085858A7F807F8200000000' 12
*     BULKIO WAITING FOR LOCK 80                                                12
 DC X'8E04004C0340002000500 0A05A8E00007F847F808085858A7F807F8300000000' 12
*     BATCH DELAY 16                                                            12
 DC X'8F15004C1017003000200040458F012F8F908F8FE19A9A9F8F8F8F9000000000' 12
*     BATCH DELAY 48                                                            12
 DC X'9015004C1023003000300060459 0012F8F918F8FE19A9A9F8F908F9100000000' 12
*     BATCH DELAY 64                                                            12
 DC X'9115004C1038003000400080459 1012F8F928F8FE09A9A9F8F908F9200000000' 12
*     BATCH DELAY 80                                                            12
 DC X'9215004C1048003000500 0A04592012F8F938F8FE09A9A9F8F908F9300000000' 12
*     BATCH DELAY 112                                                           12
 DC X'9315004C1058003000700 0E04593012F8F948F8FE09A9A9F8F908F9400000000' 12
*     BATCH DELAY 144                                                           12
 DC X'9415004C1068003000900 1204594012F8F948F8FC09A9A9F8F908F0000000000' 12
*     UNUSED                                                                    12
 DC X'950000000000000000000000000000000000000000000000000000000000000000' 12
*     UNUSED                                                                    12
 DC X'960000000000000000000000000000000000000000000000000000000000000000' 12
*     UNUSED                                                                    12
 DC X'970000000000000000000000000000000000000000000000000000000000000000' 12
*     UNUSED                                                                    12
 DC X'980000000000000000000000000000000000000000000000000000000000000000' 12
*     UNUSED                                                                    13
 DC X'990000000000000000000000000000000000000000000000000000000000000000' 13
*     BATCH HOLDING LOCK 16                                                     13
 DC X'9A15004C1004002000100020509A012F8F8F8F8F818F9A9F8F908F0000000000' 13
*     BATCH HOLDING LOCK 32                                                     13
 DC X'9B15004C0804002000200040509B012F8F908F8F808F9A9F8F908F0000000000' 13
*     BATCH HOLDING LOCK 48                                                     13
 DC X'9C15004C0404002000300060509C012F8F918F8F808F9A9F8F908F0000000000' 13
*     BATCH HOLDING LOCK 64                                                     13
 DC X'9D15004C0304002000400080509D012F8F928F8F808F9A9F8F908F0000000000' 13
*     BATCH HOLDING LOCK 80                                                     13
 DC X'9E15004C0304002000500090509E012F8F938F8F808F9A9F8F908F0000000000' 13
*     BATCH WAIT FOR LOCK 16                                                    13
 DC X'9F15004C1005002000100020509F012F8F908F8FC19A9A9F8F908F0000000000' 13
*     BATCH WAIT FOR LOCK 32                                                    13
 DC X'A015004C0805002000200040 50A0012F8F918F8FC09A9A9F8F908F0000000000' 13
*     BATCH WAIT FOR LOCK 48                                                    13
 DC X'A115004C0405002000300060 54A1012F8F928F8FC09A9A9F8F908F0000000000' 13
*     BATCH WAIT FOR LOCK 64                                                    13
 DC X'A215004C0305002000400080 5AA2012F8F938F8FC09A9A9F8F908F0000000000' 13
```

```
*    BATCH WAIT FOR LOCK 80                                                    13
 DC X'A315005C040500200050009O5AA3012F8F948F8FC09A9A9F8F908F0000000000' 13
*     EXPRESS BATCH DELAY 16                                                   13
 DC X'A413004C101700200010002050A4012FA4ABA4A481AFAFB4A4A5A4AB00000000' 13
*     EXPRESS BATCH DELAY 32                                                   13
 DC X'A513004C081700200020004050A5012FA4ACA4A481AFAFB4A4A5A4AC00000000' 13
*     EXPRESS BATCH DELAY 48                                                   14
 DC X'A613004C042300200030006054A6012FA4ADA4A480AFAFB4A4A5A4AD00000000' 14
*     EXPRESS BATCH DELAY 64                                                   14
 DC X'A713004C033800200040008O5AA7012FA4AEA4A480AFAFB4A4A5A4AE00000000' 14
*     EXPRESS BATCH DELAY 80                                                   14
 DC X'A813004C034800200050008O5AA8012FA4AEA4A480AFAFB4A4A5A4AE00000000' 14
*     EXPRESS BATCH DELAY 80                                                   14
 DC X'A913004C034800200050008O5AA9012FA4AEA4A480AFAFB4A4A5A4AE00000000' 14
*     EXPRESS BATCH GROW 16                                                    14
 DC X'AA13004C030000200010002064AA012FA4A5A4A480AFAFB4A4A5A4AA00000000' 14
*     EXPRESS BATCH GROW 32                                                    14
 DC X'AB13004C030000200020004064AB012FA4A6A4A480AFAFB4A4A5A4AB00000000' 14
*     EXPRSS BATCH GROW 48                                                     14
 DC X'AC13004C030000200030006064AC012FA4A7A4A480AFAFB4A4A5A4AC00000000' 14
*     EXPRESS BATCH GROW 64                                                    14
 DC X'AD13004C030000200040008064AD012FA4A8A4A480AFAFB4A4A5A4AD00000000' 14
*     EXPRESS BATCH GROW 80                                                    14
 DC X'AE13004C030000200050008064AE012FA4A9A4A480AFAFB4A4A5A4AE00000000' 14
*     EXPRESS BATCH HOLDING LOCK 16                                            14
 DC X'AF13004C100100200010002050BF012FA4ABA4A4A1AFAFB4A4A5A4AB00000000' 14
*     EXPRESS BATCH HOLDING LOCK 32                                            14
 DC X'B013004C080100200020004050B0012FA4ACA4A480AFAFB4A4A5A4AC00000000' 14
*     EXPRESS BATCH HOLDING LOCK 48                                            14
 DC X'B113004C040500200030006054B1012FA4ADA4A480AFAFB4A4A5A4AD00000000' 14
*     EXPRESS BATCH HOLDING LOCK 64                                            14
 DC X'B213004C030A00200040008O5AB2012FA4AEA4A480AFAFB4A4A5A4AE00000000' 14
*     EXPRESS BATCH HOLDING LOCK 80                                            15
 DC X'B313004C030A00200050008O5AB3012FA4AEA4A480AFAFB4A4A5A4AE00000000' 15
*     EXPRESS BATCH WAITING LOCK 16                                            15
 DC X'B413004C101700200010002050B4012FA4ABA4A481AFAFB4A4A5A4AB00000000' 15
*     EXPRESS BATCH WAITING LOCK 32                                            15
 DC X'B513004C081700200020004050B5012FA4ACA4A480AFAFB4A4A5A4AC00000000' 15
*     EXPRESS BATCH WAITING LOCK 48                                            15
 DC X'B613004C042000200030006054B6012FA4ADA4A480AFAFB4A4A5A4AD00000000' 15
*     EXPRESS BATCH WAITING LOCK 64                                            15
 DC X'B713004C032000200040008O5AB7012FA4AEA4A480AFAFB4A4A5A4AE00000000' 15
*     EXPRESS BATCH WAITING LOCK 80                                            15
 DC X'B813004C032000200050008O5AB8012FA4AEA4A480AFAFB4A4A5A4AE00000000' 15
*     OPERATOR HOLDING LOCK 16                                                 15
 DC X'B905004C100100200018003050B900007475747581B9B97A7475747500000000' 15
*     OPERATOR HOLDING LOCK 32                                                 15
 DC X'BA05004C080100200028005050BA000074767475580B9B97A7475747500000000' 15
*     OPERATOR HOLDING LOCK 48                                                 15
 DC X'BB05004C040500200030006050BB000074777475580B9B97A7475747600000000' 15
*     OPERATOR HOLDING LOCK 64                                                 15
 DC X'BC05004C030500200040008O5ABC000074787475580B9B97A7475747700000000' 15
*     OPERATOR HOLDING LOCK 80                                                 15
 DC X'BD05004C030500200050008O5ABD000074797475580B9B97A7475747800000000' 15
*     UNUSED                                                                   15
 DC X'BE000000000000000000000000000000000000000000000000000000000000' 15
*     EXPRESS GROW 80                                                          15
 DC X'BF13004C034000200050008064B00004B504B038059595E54504BBF00000000' 15
CHBSTLN  EQU   *   BEGINING OF LEVEL USAGE COUNTERS                           15
              END                                                             16
                                                                              16
```

Appendix I

TSO and TSS

INPUT TRANSACTIONS

I.1 TSO - INPUT TRANSACTIONS

NAME	SIGNIFICANT PART OF INPUT
NMAS1	ID=IO
NMAS2	ID=EX
NMAS3	ID=MI
NMAS4	ID=PA
NMAS5	ID=DU
INPUT2	PROC
INPUT3	IF
INPUT4	DO
INPUT5	
INPUT7	WRITE
INPUT8	END:

I.2 TSS - INPUT TRANSACTIONS

NAME	SIGNIFICANT PART OF INPUT
INP1	PARAM
INP2	IF
INP3	DISPLAY
INP4	'END'
NMAS1	ID=IO
NMAS2	ID=EX
NMAS3	ID=MI
NMAS4	ID=PA
NMAS5	ID=EN

Appendix J

Results of Measurements

RUN 25

SUMMARY REPORT MVS, MIXED, CONF. 1 J.1

REGISTER	USER IDENTIFICATION	TOTAL		AVERAGE	
R 0	REFERENCE TIMER	950.59	SECONDS		
R 1	WAIT TIME	157.61	SECONDS	16.58	PERCENT
R 2	TOTAL CPU TIME	792.98	SECONDS	83.42	PERCENT
R 3	PROBLEM PROGRAM CPU TIME	405.59	SECONDS	42.67	PERCENT
R 4	SUPERVISOR CPU TIME	387.39	SECONDS	40.75	PERCENT
R 5		0.	NOT USED		
R 6	ANY CHANNEL BUSY (EXCEPT 0)	691.09	SECONDS	72.70	PERCENT
R 7	CPU AND CHANNEL OVERLAP	555.38	SECONDS	58.43	PERCENT
R 8	CHANNEL 0 BUSY	0.96	SECONDS	0.10	PERCENT
R 9	CHANNEL 1 BUSY	320.72	SECONDS	33.74	PERCENT
R10	CHANNEL 2 BUSY	0.0	SECONDS	0.0	PERCENT
R11	CHANNEL 4 BUSY	0.0	SECONDS	0.0	PERCENT
R12	= INSTRUCTIONS	1687466291.	COUNTS		
R13	= BUFFER FETCHES	2676580461.	COUNTS		
R14	= BLOCK FETCHES	201653910.	COUNTS		
R15	= MAIN STORAGE STORES	535196124.	COUNTS		
R16	= PAGE EXCEPTIONS	1416275.	COUNTS		
R17		0.	NOT USED		
R18	CHANNEL 5 BUSY	0.0	SECONDS	0.0	PERCENT
R19	CHANNEL 6 BUSY	0.0	SECONDS	0.0	PERCENT
R20	CHANNEL 7 BUSY	601.08	SECONDS	63.23	PERCENT
R21		0.	NOT USED		
R22		0.	NOT USED		
R23		0.	NOT USED		
R24		0.	NOT USED		
R25		0.	NOT USED		
R26		0.	NOT USED		
R27		0.	NOT USED		
R28		0.	NOT USED		
R29		0.	NOT USED		
R30		0.	NOT USED		
R31		0.	NOT USED		
R32		0.	NOT USED		
R33		0.	NOT USED		
R34		0.	NOT USED		
R35		0.	NOT USED		

KFA 40L 10S B=Y TRIVIAL 9-5-5 TIME= 22

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CHANGE	34	1.10	4.27	9.30
DOWN	35	1.70	3.63	11.10
FIND	47	1.40	3.72	9.70
NMAS1	09	1.10	2.35	5.00
NMAS2	10	1.10	3.63	8.60
NMAS3	08	1.10	2.03	3.30
NMAS4	07	1.20	4.01	5.30
NMAS5	07	1.20	3.01	5.70
INPUT 2	05	1.00	1.10	1.50
INPUT 3	12	1.00	1.04	1.30
INPUT 4	12	1.00	1.04	1.30
INPUT 5	43	.90	1.33	4.80
INPUT 7	66	.90	1.01	1.30
INPUT 8	10	1.00	1.01	1.10
INSERT	67	.80	3.07	7.70
LIST IN	33	1.00	3.30	8.00
TIME	52	1.10	2.81	8.40
VERIFY	12	1.00	3.05	7.90
TOP	17	.90	2.52	6.20
ALL CMD	00	.00	.00	.00
SUMMEN	486	.80	2.62	11.10

START TIME= 22:51:26 END TIME= 23:06:26 RATE= .54 PER SECOND

J.3

KFA 40L 10S B=Y NON-TRIVIAL 9-5-5 TIME= 22

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
ALLOC	45	18.40	35.16	63.20
COPY	23	58.20	121.40	192.80
DELETE	42	61.30	154.04	→204.40
EDIT N	18	17.40	32.76	59.40
END	38	→1.00	3.92	9.60
EXEC	55	20.00	37.66	59.60
LISTCA	10	17.90	31.97	51.70
LISTDS	21	1.80	13.90	34.00
LOGON	00	.00	.00	.00
RENUM	16	5.50	7.97	11.80
SAVE	27	6.00	32.04	89.60
ALL CMD	00	.00	.00	.00
SUMMEN	295	1.00	51.72	204.40

START TIME= 22:51:26 END TIME= 23:06:26 RATE= .32 PER SECOND

J.4

KFA 40L 10S B=Y EXEC 9-5-5 TIME= 22:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
FORT	13	90.70	120.04	149.00
LOADGO	09	34.00	50.67	63.20
ALL CMD	00	.00	.00	.00
SUMMEN	22	34.00	91.66	149.00

START TIME= 22:51:26 END TIME= 23:06:26 RATE= .02 PER SECOND

```
0000 22.51.04          $HASP000 OK
4000 22.51.07 JOB  22  $HASP373 A     STARTED - INIT  5 - CLASS A - SYS H168
4000 22.51.07 JOB  23  $HASP373 B     STARTED - INIT  6 - CLASS A - SYS H168
4000 22.52.17 JOB  23  $HASP395 B     ENDED
4000 22.52.21 JOB  24  $HASP373 C     STARTED - INIT  6 - CLASS A - SYS H168
4000 22.52.49 JOB  22  $HASP395 A     ENDED
4000 22.52.51 JOB  25  $HASP373 D     STARTED - INIT  5 - CLASS A - SYS H168
4000 22.53.29 JOB  24  $HASP395 C     ENDED
4000 22.53.34 JOB  26  $HASP373 E     STARTED - INIT  6 - CLASS A - SYS H168
4000 22.55.11 JOB  25  $HASP395 D     ENDED
4000 22.55.15 JOB  27  $HASP373 F     STARTED - INIT  5 - CLASS A - SYS H168
4000 22.55.25 JOB  26  $HASP395 E     ENDED
4000 22.55.31 JOB  28  $HASP373 G     STARTED - INIT  6 - CLASS A - SYS H168
4000 22.55.57 JOB  27  $HASP395 F     ENDED
4000 22.56.00 JOB  29  $HASP373 H     STARTED - INIT  5 - CLASS A - SYS H168
4000 22.56.33 JOB  28  $HASP395 G     ENDED
4000 22.56.36 JOB  30  $HASP373 I     STARTED - INIT  6 - CLASS A - SYS H168
4000 22.58.15 JOB  29  $HASP395 H     ENDED
4000 22.58.19 JOB  31  $HASP373 J     STARTED - INIT  5 - CLASS A - SYS H168
4000 22.59.08 JOB  31  $HASP395 J     ENDED
4000 22.59.08 JOB  30  $HASP395 I     ENDED
4000 22.59.12 JOB  33  $HASP373 L     STARTED - INIT  6 - CLASS A - SYS H168
4000 22.59.12 JOB  32  $HASP373 K     STARTED - INIT  5 - CLASS A - SYS H168
4000 23.01.00 JOB  32  $HASP395 K     ENDED
4000 23.01.00 JOB  33  $HASP395 L     ENDED
4000 23.01.04 JOB  35  $HASP373 N     STARTED - INIT  6 - CLASS A - SYS H168
4000 23.01.04 JOB  34  $HASP373 M     STARTED - INIT  5 - CLASS A - SYS H168
4000 23.02.13 JOB  35  $HASP395 N     ENDED
4000 23.02.16 JOB  36  $HASP373 O     STARTED - INIT  6 - CLASS A - SYS H168
4000 23.02.25 JOB  34  $HASP395 M     ENDED
4000 23.02.28 JOB  37  $HASP373 P     STARTED - INIT  5 - CLASS A - SYS H168
4000 23.03.32 JOB  36  $HASP395 O     ENDED
4000 23.03.36 JOB  38  $HASP373 Q     STARTED - INIT  6 - CLASS A - SYS H168
4000 23.04.23 JOB  37  $HASP395 P     ENDED
4000 23.04.25 JOB  39  $HASP373 R     STARTED - INIT  5 - CLASS A - SYS H168
4000 23.05.19 JOB  39  $HASP395 R     ENDED
4000 23.05.19 JOB  38  $HASP395 Q     ENDED
4000 23.05.24 JOB  41  $HASP373 T     STARTED - INIT  6 - CLASS A - SYS H168
4000 23.05.24 JOB  40  $HASP373 S     STARTED - INIT  5 - CLASS A - SYS H168
4000 23.06.35 JOB  40  $HASP395 S     ENDED

C000 23.06.38          $HASP309 INIT  5 INACTIVE ******** C=A
4000 23.07.19 JOB  41  $HASP395 T     ENDED
C000 23.07.20          $HASP309 INIT  6 INACTIVE ******** C=A
```

J.5

23.07.19
22.51.07

BATCH 16.12

RUN 37

SUMMARY REPORT MVS, MIXED, CONF. 2 J.6

REGISTER	USER IDENTIFICATION	TOTAL		AVERAGE	
R 0	REFERENCE TIMER	960.45	SECONDS		
R 1	WAIT TIME	77.19	SECONDS	8.04	PERCENT
R 2	TOTAL CPU TIME	883.26	SECONDS	91.96	PERCENT
R 3	PROBLEM PROGRAM CPU TIME	426.39	SECONDS	44.40	PERCENT
R 4	SUPERVISOR CPU TIME	456.86	SECONDS	47.57	PERCENT
R 5		0.	NOT USED		
R 6	ANY CHANNEL BUSY (EXCEPT 0)	681.34	SECONDS	70.94	PERCENT
R 7	CPU AND CHANNEL OVERLAP	609.29	SECONDS	63.44	PERCENT
R 8	CHANNEL 0 BUSY	1.22	SECONDS	0.13	PERCENT
R 9	CHANNEL 1 BUSY	471.48	SECONDS	49.09	PERCENT
R10	CHANNEL 2 BUSY	0.0	SECONDS	0.0	PERCENT
R11	CHANNEL 4 BUSY	0.0	SECONDS	0.0	PERCENT
R12	= INSTRUCTIONS	1911565918.	COUNTS		
R13	= BUFFER FETCHES	2997577177.	COUNTS		
R14	= BLOCK FETCHES	232659121.	COUNTS		
R15	= MAIN STORAGE STORES	586671532.	COUNTS		
R16	= PAGE EXCEPTIONS	1571199.	COUNTS		
R17		0.	NOT USED		
R18	CHANNEL 5 BUSY	0.0	SECONDS	0.0	PERCENT
R19	CHANNEL 6 BUSY	0.0	SECONDS	0.0	PERCENT
R20	CHANNEL 7 BUSY	489.55	SECONDS	50.97	PERCENT
R21		0.	NOT USED		
R22		0.	NOT USED		
R23		0.	NOT USED		
R24		0.	NOT USED		
R25		0.	NOT USED		
R26		0.	NOT USED		
R27		0.	NOT USED		
R28		0.	NOT USED		
R29		0.	NOT USED		
R30		0.	NOT USED		
R31		0.	NOT USED		
R32		0.	NOT USED		
R33		0.	NOT USED		
R34		0.	NOT USED		
R35		0.	NOT USED		

KFA 40L IOS 8=Y ~~EXEC~~ 9-7-5 TIME= 4:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CHANGE	33	1.30	4.36	10.20
DOWN	35	1.40	4.97	14.40
FIND	46	1.50	4.20	11.00
NMAS1	14	1.00	4.07	12.40
NMAS2	13	1.10	4.80	13.70
NMAS3	13	1.10	3.39	8.90
NMAS4	13	1.10	3.66	11.10
NMAS5	14	1.20	3.05	8.80
INPUT 2	13	1.00	1.01	1.10
INPUT 3	26	1.00	1.01	1.20
INPUT 4	26	1.00	1.01	1.10
INPUT 5	36	.90	1.61	12.30
INPUT 7	119	.90	1.00	1.10
INPUT 8	18	.90	1.00	1.30
INSERT	66	.80	3.94	13.00
LIST IN	30	1.10	4.56	11.20
TIME	71	1.10	3.19	12.00
VERIFY	12	1.30	4.92	9.70
TOP	15	1.00	2.34	6.00
ALL CMD	00	.00	.00	.00
SUMMEN	oo3	.80	2.77	14.40

START TIME= 4:06:36 END TIME= 4:21:36 RATE= .73 PER SECOND

KFA 40L IOS S=Y ~~EXEC~~ 9-7-5

J.8

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
ALLOC	76	1.80	19.12	52.10
COPY	21	7.40	61.03	159.00
DELETE	44	3.50	67.61	158.30
EDIT N	24	1.90	17.83	33.70
END	51	.90	3.39	9.00
EXEC	69	2.70	16.70	42.70
LISTCA	13	3.30	16.06	39.40
LISTDS	25	1.50	9.29	28.00
LOGON	00	.00	.00	.00
RENUM	18	4.20	8.89	21.30
SAVE	33	3.90	18.20	58.90
ALL CMD	00	.00	.00	.00
SUMMEN	374	.90	23.17	159.00

START TIME= 4:06:36 END TIME= 4:21:36 RATE= .41 PER SECOND

KFA 40L IOS S=Y EXEC 9-7-5

J.9

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
FORT	17	9.70	57.10	114.80
LOADGO	13	17.80	33.05	50.20
ALL CMD	00	.00	.00	.00
SUMMEN	30	9.70	48.68	114.80

START TIME= 4:06:36 END TIME= 4:21:36 RATE= .03 PER SECOND

```
4000 04.11.50 STC    19  IRB100I MF/1 IS ACTIVE
0000 04.12.00            $AQ
0000 04.12.00            $HASP000 OK
4000 04.12.01 JOB    42  $HASP373 B          STARTED - INIT  6 - CLASS A - SYS H168
4000 04.12.01 JOB    41  $HASP373 A          STARTED - INIT  5 - CLASS A - SYS H168
4000 04.12.40 JOB    42  $HASP395 B          ENDED
4000 04.12.44 JOB    43  $HASP373 C          STARTED - INIT  6 - CLASS A - SYS H168
4000 04.14.02 JOB    43  $HASP395 C          ENDED
4000 04.14.05 JOB    44  $HASP373 D          STARTED - INIT  6 - CLASS A - SYS H168
4000 04.14.50 JOB    41  $HASP395 A          ENDED
4000 04.14.52 JOB    45  $HASP373 E          STARTED - INIT  5 - CLASS A - SYS H168
4000 04.16.23 JOB    44  $HASP395 D          ENDED
4000 04.16.26 JOB    46  $HASP373 F          STARTED - INIT  6 - CLASS A - SYS H168
4000 04.17.12 JOB    45  $HASP395 E          ENDED
4000 04.17.14 JOB    47  $HASP373 G          STARTED - INIT  5 - CLASS A - SYS H168
4000 04.17.14 JOB    46  $HASP395 F          ENDED
4000 04.17.17 JOB    48  $HASP373 H          STARTED - INIT  6 - CLASS A - SYS H168
4000 04.18.29 JOB    47  $HASP395 G          ENDED
4000 04.18.32 JOB    49  $HASP373 I          STARTED - INIT  5 - CLASS A - SYS H168
4000 04.19.55 JOB    48  $HASP395 H          ENDED
4000 04.19.57 JOB    50  $HASP373 J          STARTED - INIT  6 - CLASS A - SYS H168
4000 04.20.22 JOB    49  $HASP395 I          ENDED
4000 04.20.24 JOB    51  $HASP373 K          STARTED - INIT  5 - CLASS A - SYS H168
4000 04.20.33 JOB    50  $HASP395 J          ENDED
4000 04.20.35 JOB    52  $HASP373 L          STARTED - INIT  6 - CLASS A - SYS H168
4000 04.21.48 JOB    51  $HASP395 K          ENDED
4000 04.21.52 JOB    53  $HASP373 M          STARTED - INIT  5 - CLASS A - SYS H168
4000 04.22.28 JOB    52  $HASP395 L          ENDED
4000 04.22.30 JOB    54  $HASP373 N          STARTED - INIT  6 - CLASS A - SYS H168
4000 04.23.19 JOB    54  $HASP395 N          ENDED
4000 04.23.23 JOB    55  $HASP373 O          STARTED - INIT  6 - CLASS A - SYS H168
4000 04.23.30 JOB    53  $HASP395 M          ENDED
4000 04.23.33 JOB    56  $HASP373 P          STARTED - INIT  5 - CLASS A - SYS H168
4000 04.24.23 JOB    55  $HASP395 O          ENDED
4000 04.24.25 JOB    57  $HASP373 Q          STARTED - INIT  6 - CLASS A - SYS H168
4000 04.25.19 JOB    56  $HASP395 P          ENDED
4000 04.25.22 JOB    58  $HASP373 R          STARTED - INIT  5 - CLASS A - SYS H168
4000 04.26.07 JOB    58  $HASP395 R          ENDED
4000 04.26.11 JOB    59  $HASP373 S          STARTED - INIT  5 - CLASS A - SYS H168
4000 04.26.19 JOB    57  $HASP395 Q          ENDED
4000 04.26.23 JOB    60  $HASP373 T          STARTED - INIT  6 - CLASS A - SYS H168
4000 04.27.13 JOB    59  $HASP395 S          ENDED
C000 04.27.15            $HASP309     INIT  5 INACTIVE ******** C=A
4000 04.28.09 JOB    60  $HASP395 T          ENDED
0000 04.28.10            P MF
C000 04.28.10            $HASP309     INIT  6 INACTIVE ******** C=A
4000 04.28.14 STC    19  IRB102I MF/1 TERMINATED
4000 04.28.14 STC    19  $HASP395 MF1        ENDED
```

J.10

BATCH

16 MIN 9 SEC

RUN 30

SUMMARY REPORT MVS, MIXED, CONF 3 J.11

REGISTER	USER IDENTIFICATION	TOTAL		AVERAGE	
R 0	REFERENCE TIMER	960.77	SECONDS		
R 1	WAIT TIME	91.98	SECONDS	9.57	PERCENT
R 2	TOTAL CPU TIME	868.79	SECONDS	90.43	PERCENT
R 3	PROBLEM PROGRAM CPU TIME	425.47	SECONDS	44.28	PERCENT
R 4	SUPERVISOR CPU TIME	443.32	SECONDS	46.14	PERCENT
R 5		0.	NOT USED		
R 6	ANY CHANNEL BUSY (EXCEPT 0)	667.46	SECONDS	69.47	PERCENT
R 7	CPU AND CHANNEL OVERLAP	589.92	SECONDS	61.40	PERCENT
R 8	CHANNEL 0 BUSY	1.20	SECONDS	0.12	PERCENT
R 9	CHANNEL 1 BUSY	320.21	SECONDS	33.33	PERCENT
R10	CHANNEL 2 BUSY	431.74	SECONDS	44.94	PERCENT
R11	CHANNEL 4 BUSY	0.0	SECONDS	0.0	PERCENT
R12	= INSTRUCTIONS	1674482829.	COUNTS		
R13	= BUFFER FETCHES	2949546094.	COUNTS		
R14	= BLOCK FETCHES	225770129.	COUNTS		
R15	= MAIN STORAGE STORES	579949767.	COUNTS		
R16	= PAGE EXCEPTIONS	1599304.	COUNTS		
R17		0.	NOT USED		
R18	CHANNEL 5 BUSY	0.0	SECONDS	0.0	PERCENT
R19	CHANNEL 6 BUSY	0.0	SECONDS	0.0	PERCENT
R20	CHANNEL 7 BUSY	304.74	SECONDS	31.72	PERCENT
R21		0.	NOT USED		
R22		0.	NOT USED		
R23		0.	NOT USED		
R24		0.	NOT USED		
R25		0.	NOT USED		
R26		0.	NOT USED		
R27		0.	NOT USED		
R28		0.	NOT USED		
R29		0.	NOT USED		
R30		0.	NOT USED		
R31		0.	NOT USED		
R32		0.	NOT USED		
R33		0.	NOT USED		
R34		0.	NOT USED		
R35		0.	NOT USED		

KFA 40L 10S B=Y TRIVIAL 9-5-5 TIME= 4

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CHANGE	19	1.40	4.17	12.30
DOWN	19	1.70	4.56	12.00
FIND	24	1.90	6.06	12.40
NMAS1	13	1.00	2.76	6.50
NMAS2	13	1.10	3.47	12.80
NMAS3	12	1.20	2.52	7.40
NMAS4	11	1.20	3.90	11.70
NMAS5	12	1.10	4.23	14.80
INPUT 2	15	1.00	1.00	1.00
INPUT 3	32	.90	1.00	1.10
INPUT 4	32	1.00	1.00	1.20
INPUT 5	92	.90	1.42	6.90
INPUT 7	102	.90	1.01	2.20
INPUT 8	14	1.00	1.00	1.10
INSERT	44	.80	5.30	16.20
LIST IN	17	1.10	3.72	14.20
TIME	75	1.10	3.74	12.60
VERIFY	09	1.00	1.84	4.40
TOP	05	.80	1.92	5.10
ALL CMD	00	.00	.00	.00
SUMMEN	560	.80	2.58	16.20

START TIME= 4:38:03 END TIME= 4:53:03 RATE= .62 PER SECOND

J.13

KFA 40L 10S B=Y NON-TRIVIAL 9-5-5 TIME= 4:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
ALLOC	95	2.70	22.07	72.60
COPY	24	5.90	77.36	184.70
DELETE	51	2.70	63.78	176.80
EDIT N	24	1.90	23.11	71.10
END	47	1.00	3.63	12.90
EXEC	74	4.00	25.82	67.00
LISTCA	17	6.70	25.71	62.80
LISTDS	37	1.30	11.24	42.90
LOGON	00	.00	.00	.00
RENUM	18	3.60	10.48	19.60
SAVE	31	3.00	24.68	71.10
ALL CMD	00	.00	.00	.00
SUMMEN	418	1.00	27.88	184.70

START TIME= 4:38:03 END TIME= 4:53:03 RATE= .46 PER SECOND

J.14

KFA 40L 10S B=Y EXEC 9-5-5 TIME= 4:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
FORT	16	18.50	79.38	165.10
LOADGO	17	16.90	40.73	88.60
ALL CMD	00	.00	.00	.00
SUMMEN	33	16.90	59.47	165.10

START TIME= 4:38:03 END TIME= 4:53:03 RATE= .03 PER SECOND

```
4000 04.37.27 JOB    1  $HASP373 A        STARTED - INIT  5 - CLASS A - SYS H168
4000 04.37.26 JOB    2  $HASP373 B        STARTED - INIT  6 - CLASS A - SYS H168
4000 04.38.36 JOB    2  $HASP395 B        ENDED
4000 04.38.40 JOB    3  $HASP373 C        STARTED - INIT  6 - CLASS A - SYS H168
4000 04.39.15 JOB    1  $HASP395 A        ENDED
4000 04.39.18 JOB    4  $HASP373 D        STARTED - INIT  5 - CLASS A - SYS H168
4000 04.40.25 JOB    3  $HASP395 C        ENDED
4000 04.40.30 JOB    5  $HASP373 E        STARTED - INIT  6 - CLASS A - SYS H168
4000 04.41.13 JOB    4  $HASP395 D        ENDED
4000 04.41.15 JOB    6  $HASP373 F        STARTED - INIT  5 - CLASS A - SYS H168
4000 04.41.53 JOB    6  $HASP395 F        ENDED
4000 04.41.57 JOB    7  $HASP373 G        STARTED - INIT  5 - CLASS A - SYS H168
4000 04.42.20 JOB    5  $HASP395 E        ENDED
4000 04.42.24 JOB    8  $HASP373 H        STARTED - INIT  6 - CLASS A - SYS H168
4000 04.43.03 JOB    7  $HASP395 G        ENDED
4000 04.43.06 JOB    9  $HASP373 I        STARTED - INIT  5 - CLASS A - SYS H168
4000 04.44.53 JOB    8  $HASP395 H        ENDED
4000 04.44.57 JOB   10  $HASP373 J        STARTED - INIT  6 - CLASS A - SYS H168
4000 04.45.14 JOB    9  $HASP395 I        ENDED
4000 04.45.17 JOB   11  $HASP373 K        STARTED - INIT  5 - CLASS A - SYS H168
4000 04.45.36 JOB   10  $HASP395 J        ENDED
4000 04.45.40 JOB   12  $HASP373 L        STARTED - INIT  6 - CLASS A - SYS H168

4000 04.46.21 JOB   11  $HASP395 K        ENDED
4000 04.46.23 JOB   13  $HASP373 M        STARTED - INIT  5 - CLASS A - SYS H168
4000 04.47.52 JOB   12  $HASP395 L        ENDED
4000 04.47.56 JOB   14  $HASP373 N        STARTED - INIT  6 - CLASS A - SYS H168
4000 04.48.20 JOB   13  $HASP395 M        ENDED
4000 04.48.24 JOB   15  $HASP373 O        STARTED - INIT  5 - CLASS A - SYS H168
4000 04.48.40 JOB   14  $HASP395 N        ENDED
4000 04.48.44 JOB   16  $HASP373 P        STARTED - INIT  6 - CLASS A - SYS H168
4000 04.49.26 JOB   15  $HASP395 O        ENDED
4000 04.49.30 JOB   17  $HASP373 Q        STARTED - INIT  5 - CLASS A - SYS H168
4000 04.50.29 JOB   16  $HASP395 P        ENDED
4000 04.50.31 JOB   18  $HASP373 R        STARTED - INIT  6 - CLASS A - SYS H168
4000 04.51.33 JOB   17  $HASP395 Q        ENDED
4000 04.51.33 JOB   18  $HASP395 R        ENDED
4000 04.51.35 JOB   20  $HASP373 T        STARTED - INIT  6 - CLASS A - SYS H168
4000 04.51.35 JOB   19  $HASP373 S        STARTED - INIT  5 - CLASS A - SYS H168
4000 04.53.15 JOB   19  $HASP395 S        ENDED
4000 04.53.17       --  $HASP309     INIT  5 INACTIVE ******** C=A
4000 04.53.37 JOB   20  $HASP395 T        ENDED
4000 04.53.38       --  $HASP309     INIT  6 INACTIVE ******** C=A
```

7-15

4.53,37

4.37.27

BATCH 16.10

RUN 27

SUMMARY REPORT MVS, MIXED, CONF. 4 J.16

REGISTER	USER IDENTIFICATION	TOTAL		AVERAGE	
R 0	REFERENCE TIMER	920.84	SECONDS		
R 1	WAIT TIME	51.51	SECONDS	5.59	PERCENT
R 2	TOTAL CPU TIME	869.33	SECONDS	94.41	PERCENT
R 3	PROBLEM PROGRAM CPU TIME	439.84	SECONDS	47.76	PERCENT
R 4	SUPERVISOR CPU TIME	429.49	SECONDS	46.64	PERCENT
R 5		0.	NOT USED		
R 6	ANY CHANNEL BUSY (EXCEPT 0)	595.54	SECONDS	64.67	PERCENT
R 7	CPU AND CHANNEL OVERLAP	556.52	SECONDS	60.44	PERCENT
R 8	CHANNEL 0 BUSY	1.67	SECONDS	0.18	PERCENT
R 9	CHANNEL 1 BUSY	252.64	SECONDS	27.44	PERCENT
R10	CHANNEL 2 BUSY	0.0	SECONDS	0.0	PERCENT
R11	CHANNEL 4 BUSY	0.0	SECONDS	0.0	PERCENT
R12	= INSTRUCTIONS	1890786317.	COUNTS		
R13	= BUFFER FETCHES	2977035224.	COUNTS		
R14	= BLOCK FETCHES	221096792.	COUNTS		
R15	= MAIN STORAGE STORES	581620126.	COUNTS		
R16	= PAGE EXCEPTIONS	1761920.	COUNTS		
R17		0.	NOT USED		
R18	CHANNEL 5 BUSY	0.0	SECONDS	0.0	PERCENT
R19	CHANNEL 6 BUSY	0.0	SECONDS	0.0	PERCENT
R20	CHANNEL 7 BUSY	507.11	SECONDS	55.07	PERCENT
R21		0.	NOT USED		
R22		0.	NOT USED		
R23		0.	NOT USED		
R24		0.	NOT USED		
R25		0.	NOT USED		
R26		0.	NOT USED		
R27		0.	NOT USED		
R28		0.	NOT USED		
R29		0.	NOT USED		
R30		0.	NOT USED		
R31		0.	NOT USED		
R32		0.	NOT USED		

KFA 80L 10S B=N TRIVIAL 9-5-5 TIME= 0:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CHANGE	29	1.20	2.86	12.00
DOWN	32	1.50	2.70	7.40
FIND	46	1.30	3.64	19.30
NMAS1	18	1.10	2.67	9.90
NMAS2	18	1.00	2.22	8.90
NMAS3	19	1.00	1.47	4.00
NMAS4	22	1.00	1.53	3.00
NMAS5	22	1.10	2.18	7.10
INPUT 2	22	1.00	1.07	2.60
INPUT 3	44	.90	1.01	1.60
INPUT 4	40	.80	1.00	1.30
INPUT 5	117	.90	1.51	19.00
INPUT 7	89	.90	1.01	1.40
INPUT 8	11	.90	.99	1.00
INSERT	67	.80	2.82	24.30
LIST IN	31	1.00	2.40	8.20
TIME	107	1.00	2.87	17.90
VERIFY	18	.80	4.30	19.40
TOP	13	.80	1.64	5.30
ALL CMD	00	.00	.00	.00
SUMMEN	765	.80	2.08	24.30

START TIME= 0:39:45 END TIME= 0:54:45 RATE= .85 PER SECOND

J.18

KFA 80L 10S B=N NON-TRIVIAL 9-5-5 TIME= 0:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
ALLOC	113	1.90	8.88	45.20
COPY	38	9.10	23.89	65.20
DELETE	70	2.00	11.85	35.30
EDIT N	41	1.50	8.31	26.10
END	46	.90	3.45	26.00
EXEC	63	1.60	6.28	20.90
LISTCA	16	4.30	11.16	24.80
LISTDS	35	1.00	4.59	25.30
LOGON	00	.00	.00	.00
RENUM	22	3.60	6.61	17.80
SAVE	35	3.70	12.06	31.50
ALL CMD	00	.00	.00	.00
SUMMEN	479	.90	9.48	65.20

START TIME= 0:39:45 END TIME= 0:54:45 RATE= .53 PER SECOND

J.19

KFA 80L 10S B=N EXEC 9-5-5 TIME= 0:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
FORT	25	4.20	16.54	43.00
LOADGO	19	13.10	31.09	58.90
ALL CMD	00	.00	.00	.00
SUMMEN	44	4.20	22.82	58.90

START TIME= 0:39:45 END TIME= 0:54:45 RATE= .04 PER SECOND

```
4000 00.28.52 STC     6  IRB305I    NORECORD
4000 00.28.52 STC     6  IRB305I    CYCLE(250)
4000 00.28.52 STC     6  IRB305I    INTERVAL(60M)
4000 00.28.52 STC     6  IRB305I    STOP(600M)
4000 00.28.52 STC     6  IRB305I    SYSOUT(A)
4000 00.28.52 STC     6  IRB305I    REPORT(DEFER)
4000 00.28.53 STC     6  IRB305I    MEMBER(00)
8020 00.28.53 STC     6 *03 IRB306D REPLY WITH MF/1 OPTIONS OR GO
0000 00.38.05            D T
0000 00.38.05            IEE136I  TIME=00.38.05 DATE=75.249
0000 00.39.01            3GO
0000 00.39.01            R 03,GO
4000 00.39.01            IEF170I 1 CONSOLE  IEE600I REPLY TO 03 IS GO
8020 00.39.01            IEE600I REPLY TO 03 IS GO
4000 00.39.05 STC     6  IRB100I MF/1 IS ACTIVE
0000 00.39.09            $AQ
0000 00.39.09            $HASP000 OK
4000 00.39.10 JOB     2  $HASP373 B         STARTED - INIT  6 - CLASS A - SYS H168
4000 00.39.10 JOB     1  $HASP373 A         STARTED - INIT  5 - CLASS A - SYS H168
4000 00.39.44 JOB     2  $HASP395 B         ENDED
4000 00.39.46 JOB     3  $HASP373 C         STARTED - INIT  6 - CLASS A - SYS H168
0200 00.39.47 JOB     2  $HASP150 B         ON PRINTER3
0000 00.39.56            $PPRT3
0000 00.39.58            $HASP000 OK
0300 00.40.01            $HASP097 PRINTER3 IS DRAINED
4000 00.40.49 JOB     3  $HASP395 C         ENDED
4000 00.40.50 JOB     1  $HASP395 A         ENDED
4000 00.40.53 JOB     5  $HASP373 E         STARTED - INIT  6 - CLASS A - SYS H168
4000 00.40.53 JOB     4  $HASP373 D         STARTED - INIT  5 - CLASS A - SYS H168
4000 00.43.01 JOB     5  $HASP395 E         ENDED
4000 00.43.05 JOB     6  $HASP373 F         STARTED - INIT  6 - CLASS A - SYS H168
4000 00.43.29 JOB     4  $HASP395 D         ENDED
4000 00.43.33 JOB     7  $HASP373 G         STARTED - INIT  5 - CLASS A - SYS H168
4000 00.43.42 JOB     6  $HASP395 F         ENDED
4000 00.43.43 JOB     8  $HASP373 H         STARTED - INIT  6 - CLASS A - SYS H168
4000 00.44.37 JOB     7  $HASP395 G         ENDED
4000 00.44.40 JOB     9  $HASP373 I         STARTED - INIT  5 - CLASS A - SYS H168
4000 00.46.11 JOB     8  $HASP395 H         ENDED
4000 00.46.14 JOB    10  $HASP373 J         STARTED - INIT  6 - CLASS A - SYS H168
4000 00.46.24 JOB     9  $HASP395 I         ENDED
4000 00.46.26 JOB    11  $HASP373 K         STARTED - INIT  5 - CLASS A - SYS H168
4000 00.46.47 JOB    10  $HASP395 J         ENDED
4000 00.46.50 JOB    12  $HASP373 L         STARTED - INIT  6 - CLASS A - SYS H168
```

```
4000 00.49.00 JOB    14  $HASP373 N        STARTED - INIT  5 - CLASS A - SYS H168
4000 00.49.16 JOB    12  $HASP395 L        ENDED
4000 00.49.19 JOB    15  $HASP373 O        STARTED - INIT  6 - CLASS A - SYS H168
4000 00.49.31 JOB    14  $HASP395 N        ENDED
4000 00.49.32 JOB    16  $HASP373 P        STARTED - INIT  5 - CLASS A - SYS H168
4000 00.50.18 JOB    15  $HASP395 O        ENDED
4000 00.50.21 JOB    17  $HASP373 Q        STARTED - INIT  6 - CLASS A - SYS H168
4000 00.52.00 JOB    16  $HASP395 P        ENDED
4000 00.52.04 JOB    18  $HASP373 R        STARTED - INIT  5 - CLASS A - SYS H168
4000 00.52.05 JOB    17  $HASP395 Q        ENDED
4000 00.52.07 JOB    19  $HASP373 S        STARTED - INIT  6 - CLASS A - SYS H168
4000 00.52.39 JOB    18  $HASP395 R        ENDED
4000 00.52.42 JOB    20  $HASP373 T        STARTED - INIT  5 - CLASS A - SYS H168
4000 00.53.02 JOB    19  $HASP395 S        ENDED
```

J.21

BATCH
14 MIN 57 SEC

```
C000 00.53.04          $HASP309    INIT  6 INACTIVE ******** C=A
0000 00.53.22          IGF002I CHANNEL DETECTED ERROR ON 034,00,CHAN,01,0C44
4000 00.53.23 STC   5  IEF170I 1 MSTRJCL  IEA000I 034,CCC,01,0C44,,,,TCAMKF  ,00.53.22
01F6 00.53.22 STC   5  IEA000I 034,CCC,01,0C44,,,,TCAMKF  ,00.53.22
4000 00.53.36 STC   5  IEF170I 1 MSTRJCL  IEA000I 034,CCC,01,0C44,,,,TCAMKF  ,00.53.36
01F6 00.53.36 STC   5  IEA000I 034,CCC,01,0C44,,,,TCAMKF  ,00.53.36
0000 00.53.37          IGF002I CHANNEL DETECTED ERROR ON 034,00,CHAN,01,0C44
4000 00.53.48 STC   5  IEF170I 1 MSTRJCL  IEA000I 034,CCC,01,0C46,,,,TCAMKF  ,00.53.48
01F6 00.53.48 STC   5  IEA000I 034,CCC,01,0C46,,,,TCAMKF  ,00.53.48
0000 00.53.48          IGF002I CHANNEL DETECTED ERROR ON 0XX,00,    ,00,0C44
4000 00.54.03 STC   5  IEF170I 1 MSTRJCL  IEA000I 034,CCC,01,0C44,,,,TCAMKF  ,00.54.03
01F6 00.54.03 STC   5  IEA000I 034,CCC,01,0C44,,,,TCAMKF  ,00.54.03
0000 00.54.04          IGF002I CHANNEL DETECTED ERROR ON 034,00,CHAN,01,0C44
4000 00.54.07 JOB   20 $HASP395 T        ENDED
C000 00.54.08          $HASP309    INIT  5 INACTIVE ******** C=A
4000 00.54.15 STC   5  IEF170I 1 MSTRJCL  IEA000I 034,CCC,01,0C46,,,,TCAMKF  ,00.54.15
01F6 00.54.15 STC   5  IEA000I 034,CCC,01,0C46,,,,TCAMKF  ,00.54.15
0000 00.54.15          IGF002I CHANNEL DETECTED ERROR ON 0XX,00,    ,00,0C44
4000 00.54.27 STC   5  IEF170I 1 MSTRJCL  IEA000I 034,CCC,01,0C46,,,,TCAMKF  ,00.54.27
01F6 00.54.27 STC   5  IEA000I 034,CCC,01,0C46,,,,TCAMKF  ,00.54.27
0000 00.54.27          IGF002I CHANNEL DETECTED ERROR ON 0XX,00,    ,00,0C44
4000 00.54.40 STC   5  IEF170I 1 MSTRJCL  IEA000I 034,CCC,01,0C46,,,,TCAMKF  ,00.54.40
01F6 00.54.40 STC   5  IEA000I 034,CCC,01,0C46,,,,TCAMKF  ,00.54.40
0000 00.54.40          IGF002I CHANNEL DETECTED ERROR ON 0XX,00,    ,00,0C44
0000 00.54.51          P MFF T,TS=STOP
0000 00.54.51          IEE341I MFF      NOT ACTIVE
4000 00.54.53 STC   5  IEF170I 1 MSTRJCL  IEA000I 034,CCC,01,0C46,,,,TCAMKF  ,00.54.53
01F6 00.54.53 STC   5  IEA000I 034,CCC,01,0C46,,,,TCAMKF  ,00.54.53
0000 00.54.53          IGF002I CHANNEL DETECTED ERROR ON 0XX,00,    ,00,0C44
```

REGISTER	USER IDENTIFICATION	TOTAL		AVERAGE	
R 0	REFERENCE TIMER	1235.91	SECONDS		
R 1	WAIT TIME	451.43	SECONDS	36.53	PERCENT
R 2	TOTAL CPU TIME	784.48	SECONDS	63.47	PERCENT
R 3	PROBLEM PROGRAM CPU TIME	388.68	SECONDS	31.45	PERCENT
R 4	SUPERVISOR CPU TIME	395.80	SECONDS	32.02	PERCENT
R 5		0.	NOT USED		
R 6	ANY CHANNEL BUSY (EXCEPT 0)	668.54	SECONDS	54.09	PERCENT
R 7	CPU AND CHANNEL OVERLAP	307.23	SECONDS	24.86	PERCENT
R 8	CHANNEL 0 BUSY	0.97	SECONDS	0.08	PERCENT
R 9	CHANNEL 1 BUSY	524.76	SECONDS	42.46	PERCENT
R10	CHANNEL 2 BUSY	0.0	SECONDS	0.0	PERCENT
R11	CHANNEL 4 BUSY	0.0	SECONDS	0.0	PERCENT
R12	= INSTRUCTIONS	1680110572.	COUNTS		
R13	= BUFFER FETCHES	262533e711.	COUNTS		
R14	= BLOCK FETCHES	208632813.	COUNTS		
R15	= MAIN STORAGE STORES	54086076e.	COUNTS		
R16	= PAGE EXCEPTIONS	1266516.	COUNTS		
R17		0.	NOT USED		
R18	CHANNEL 5 BUSY	0.0	SECONDS	0.0	PERCENT
R19	CHANNEL 6 BUSY	0.0	SECONDS	0.0	PERCENT
R20	CHANNEL 7 BUSY	341.94	SECONDS	27.67	PERCENT
R21		0.	NOT USED		
R22		0.	NOT USED		
R23		0.	NOT USED		
R24		0.	NOT USED		
R25		0.	NOT USED		
R26		0.	NOT USED		
R27		0.	NOT USED		
R28		0.	NOT USED		
R29		0.	NOT USED		
R30		0.	NOT USED		
R31		0.	NOT USED		
R32		0.	NOT USED		
R33		0.	NOT USED		
R34		0.	NOT USED		
R35		0.	NOT USED		

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CHANGE	19	1.30	8.02	18.00
DOWN	20	1.60	6.93	23.80
FIND	28	1.60	6.20	20.70
NMAS1	05	1.40	2.98	5.70
NMAS2	04	1.40	11.97	38.00
NMAS3	02	1.20	2.90	4.60
NMAS4	02	1.30	1.45	1.60
NMAS5	01	1.20	1.20	1.20
INPUT 2	02	1.00	1.75	2.50
INPUT 3	07	1.00	1.01	1.10
INPUT 4	07	1.00	1.00	1.00
INPUT 5	33	1.00	2.13	16.70
INPUT 7	58	.90	1.00	1.30
INPUT 6	09	1.00	1.00	1.00
INSERT	40	1.10	7.19	50.60
LIST IN	19	1.90	11.99	51.70
TIME	35	1.20	4.95	27.70
VERIFY	08	1.00	5.66	14.60
TOP	10	1.90	7.23	13.70
ALL CMD	00	.00	.00	.00
SUMMEN	309	.90	4.85	51.70

START TIME= 23:05:03 END TIME= 23:20:03 RATE= .34 PER SECOND

J.24

```
H KFA 40L 10S B=Y EXEC 9-7-5
LS00000FFFFF
I900
F9999
P90
ON
TALLOC    <10    ALLOCATE*
TCOPY     <10    COPY *
TDELETE   <10    DELETE*
TEDIT N   <10    EDIT*
TEND      <10    END*
TEXEC     <10    EXEC*
TLISTCA   <10    LISTCAT*
TLISTDS   <10    LISTDS*
TLOGON    <10    LOGON*
TRENUM    <10    RENUM*
TSAVE     <10    SAVE*
END
```

KFA 40L 10S B=Y EXEC 9-7-5

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
ALLOC	41	1.80	63.44	144.50
COPY	16	111.40	272.90	440.60
DELETE	22	1.30	306.35	488.60
EDIT N	08	1.30	59.40	103.80
END	29	1.00	9.45	61.40
EXEC	48	24.60	78.21	146.00
LISTCA	08	34.50	63.21	143.50
LISTDS	09	1.90	32.44	69.90
LOGON	00	.00	.00	.00
RENUM	10	2.00	19.29	61.00
SAVE	20	3.60	61.65	175.10
ALL CMD	00	.00	.00	.00
SUMMEN	211	1.00	96.84	488.60

START TIME= 23:05:03 END TIME= 23:20:03 RATE= .23 PER SECOND

J.26

```
H KFA 40L 10S B=Y EXEC 9-7-5
LS00000FFFFF
I900
F9999
P90
ON
TFORT     <10    FORT *
TLOADGO   <10    LOADGO*
END
```

J.27

KFA 40L 10S B=Y EXEC 9-7-5

TRANSACTION ID	NUMBER	LOW RESPONSE	AVC RESPONSE	HIGH RESPONSE
FORT	09	6.90	189.33	304.80
LOADGO	05	1.10	65.24	146.40
ALL CMD	00	.00	.00	.00
SUMMEN	14	1.10	145.01	304.80

START TIME= 23:05:03 END TIME= 23:20:03 RATE= .01 PER SECOND

```
4000 11.03.31 JOB     1  $HASP373 A          STARTED - INIT  5 - CLASS A - SYS H168
4000 11.03.31 JOB     2  $HASP373 B          STARTED - INIT  6 - CLASS A - SYS H168
4000 11.04.21 JOB     2  $HASP395 B          ENDED
4000 11.04.24 JOB     3  $HASP373 C          STARTED - INIT  6 - CLASS A - SYS H168
4000 11.04.59 JOB     3  $HASP395 C          ENDED
4000 11.05.02 JOB     4  $HASP373 D          STARTED - INIT  6 - CLASS A - SYS H168
4000 11.05.26 JOB     1  $HASP395 A          ENDED
4000 11.05.27 JOB     5  $HASP373 E          STARTED - INIT  5 - CLASS A - SYS H168
4000 11.06.53 JOB     5  $HASP395 E          ENDED
4000 11.06.55 JOB     6  $HASP373 F          STARTED - INIT  5 - CLASS A - SYS H168
4000 11.09.25 JOB     6  $HASP395 F          ENDED
4000 11.09.29 JOB     7  $HASP373 G          STARTED - INIT  5 - CLASS A - SYS H168
4000 11.10.09 JOB     7  $HASP395 G          ENDED
4000 11.10.11 JOB     8  $HASP373 H          STARTED - INIT  5 - CLASS A - SYS H168
4000 11.10.34 JOB     4  $HASP395 D          ENDED
4000 11.10.40 JOB     9  $HASP373 I          STARTED - INIT  6 - CLASS A - SYS H168
4000 11.11.43 JOB     8  $HASP395 H          ENDED
4000 11.11.42 JOB    10  $HASP373 J          STARTED - INIT  5 - CLASS A - SYS H168
4000 11.12.21 JOB    10  $HASP395 J          ENDED
4000 11.12.24 JOB    11  $HASP373 K          STARTED - INIT  5 - CLASS A - SYS H168
4000 11.13.04 JOB    11  $HASP395 K          ENDED
4000 11.13.07 JOB    12  $HASP373 L          STARTED - INIT  5 - CLASS A - SYS H168
4000 11.13.53 JOB     9  $HASP395 I          ENDED
4000 11.13.55 JOB    13  $HASP373 M          STARTED - INIT  6 - CLASS A - SYS H168
4000 11.17.16 JOB    12  $HASP395 L          ENDED
4000 11.17.19 JOB    14  $HASP373 N          STARTED - INIT  5 - CLASS A - SYS H168
4000 11.17.52 JOB    14  $HASP395 N          ENDED
4000 11.17.55 JOB    15  $HASP373 O          STARTED - INIT  5 - CLASS A - SYS H168
4000 11.18.38 JOB    15  $HASP395 O          ENDED

4000 11.18.40 JOB    16  $HASP373 P          STARTED - INIT  5 - CLASS A - SYS H168
4000 11.19.44 JOB    16  $HASP395 P          ENDED
4000 11.19.45 JOB    17  $HASP373 Q          STARTED - INIT  5 - CLASS A - SYS H168
4000 11.20.29 JOB    17  $HASP395 Q          ENDED
4000 11.20.32 JOB    18  $HASP373 R          STARTED - INIT  5 - CLASS A - SYS H168
4000 11.20.58 JOB    18  $HASP395 R          ENDED
4000 11.21.01 JOB    19  $HASP373 S          STARTED - INIT  5 - CLASS A - SYS H168
4000 11.21.39 JOB    19  $HASP395 S          ENDED
4000 11.21.42 JOB    20  $HASP373 T          STARTED - INIT  5 - CLASS A - SYS H168
4000 11.22.07 JOB    15  $HASP395 M          ENDED
C000 11.22.08            $HASP309     INIT   6 INACTIVE ******** C=A
4000 11.24.14 JOB    20  $HASP395 T          ENDED
C000 11.24.15            $HASP309     INIT   5 INACTIVE ******** C=A
```

J.28

11.24.14
11.03.31
20.43

BITCH

RUN 26

SUMMARY REPORT MVS, TS ONLY, CONF. 1 J.29

REGISTER	USER IDENTIFICATION	TOTAL		AVERAGE	
R 0	REFERENCE TIMER	890.62	SECONDS		
R 1	WAIT TIME	530.79	SECONDS	59.60	PERCENT
R 2	TOTAL CPU TIME	359.83	SECONDS	40.40	PERCENT
R 3	PROBLEM PROGRAM CPU TIME	26.05	SECONDS	2.92	PERCENT
R 4	SUPERVISOR CPU TIME	333.78	SECONDS	37.48	PERCENT
R 5		0.	NOT USED		
R 6	ANY CHANNEL BUSY (EXCEPT 0)	673.37	SECONDS	75.61	PERCENT
R 7	CPU AND CHANNEL OVERLAP	233.66	SECONDS	26.24	PERCENT
R 8	CHANNEL 0 BUSY	0.65	SECONDS	0.07	PERCENT
R 9	CHANNEL 1 BUSY	418.85	SECONDS	47.03	PERCENT
R10	CHANNEL 2 BUSY	0.0	SECONDS	0.0	PERCENT
R11	CHANNEL 4 BUSY	0.0	SECONDS	0.0	PERCENT
R12	= INSTRUCTIONS	921094893.	COUNTS		
R13	= BUFFER FETCHES	1348491383.	COUNTS		
R14	= BLOCK FETCHES	122455039.	COUNTS		
R15	= MAIN STORAGE STORES	199966292.	COUNTS		
R16	= PAGE EXCEPTIONS	536278.	COUNTS		
R17		0.	NOT USED		
R18	CHANNEL 5 BUSY	0.0	SECONDS	0.0	PERCENT
R19	CHANNEL 6 BUSY	0.0	SECONDS	0.0	PERCENT
R20	CHANNEL 7 BUSY	546.62	SECONDS	61.38	PERCENT
R21		0.	NOT USED		
R22		0.	NOT USED		
R23		0.	NOT USED		
R24		0.	NOT USED		
R25		0.	NOT USED		
R26		0.	NOT USED		
R27		0.	NOT USED		
R28		0.	NOT USED		
R29		0.	NOT USED		
R30		0.	NOT USED		
R31		0.	NOT USED		
R32		0.	NOT USED		
R33		0.	NOT USED		
R34		0.	NOT USED		
R35		0.	NOT USED		

J.30

KFA BOL 10S B=N TRIVIAL 9-5-5 TIME= 23:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CHANGE	20	1.40	2.78	7.60
DOWN	19	1.30	3.11	5.30
FIND	37	1.30	3.63	8.30
NMAS1	03	1.10	1.86	2.90
NMAS2	02	1.10	1.15	1.20
NMAS3	02	1.20	1.40	1.60
NMAS4	02	1.30	2.65	4.00
NMAS5	02	1.60	1.80	2.00
INPUT 2	22	1.00	1.00	1.10
INPUT 3	43	1.00	1.00	1.10
INPUT 4	42	.90	1.00	1.30
INPUT 5	123	.90	1.30	8.50
INPUT 7	124	.90	1.00	1.20
INPUT 8	15	1.00	1.01	1.10
INSERT	40	.70	2.50	11.70
LIST IN	26	1.00	2.69	9.10
TIME	88	1.00	2.19	8.50
VERIFY	19	.90	1.64	3.70
TOP	12	.70	1.76	3.90
ALL CMD	00	.00	.00	.00
SUMMEN	641	.70	1.70	11.70

START TIME= 23:36:02 END TIME= 23:51:02 RATE= .71 PER SECOND

7.31

KFA 80L 10S B=N NON-TRIVIAL 9-5-5 TIME= 23:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
ALLOC	16	21.80	31.94	53.10
COPY	107	90.90	137.05	208.00
DELETE	256	37.50	103.20	216.00
EDIT N	41	21.50	39.00	60.50
END	28	1.00	2.32	8.30
EXEC	27	28.10	44.06	81.50
LISTCA	20	19.90	29.63	45.20
LISTDS	42	1.00	18.19	48.50
LOGON	00	.00	.00	.00
RENUM	07	3.20	6.07	8.20
SAVE	14	4.00	37.08	83.00
ALL CMD	00	.00	.00	.00
SUMMEN	556	1.00	83.09	216.00

START TIME= 23:36:02 END TIME= 23:51:02 RATE= .62 PER SECOND

7.32

KFA 80L 10S B=N EXEC 9-5-5 TIME= 23:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
FORT	05	81.50	110.34	140.60
LOADGO	03	44.30	59.50	86.40
ALL CMD	00	.00	.00	.00
SUMMEN	08	44.30	91.27	140.60

START TIME= 23:36:02 END TIME= 23:51:02 RATE= .00 PER SECOND

SUMMARY REPORT MVS, TS ONLY, CONF. 2 7.33

REGISTER	USER IDENTIFICATION	TOTAL		AVERAGE	
R 0	REFERENCE TIMER	890.84	SECONDS		
R 1	WAIT TIME	484.88	SECONDS	54.43	PERCENT
R 2	TOTAL CPU TIME	405.96	SECONDS	45.57	PERCENT
R 3	PROBLEM PROGRAM CPU TIME	38.33	SECONDS	4.30	PERCENT
R 4	SUPERVISOR CPU TIME	367.63	SECONDS	41.27	PERCENT
R 5		0.	NOT USED		
R 6	ANY CHANNEL BUSY (EXCEPT 0)	664.52	SECONDS	74.59	PERCENT
R 7	CPU AND CHANNEL OVERLAP	271.78	SECONDS	30.51	PERCENT
R 8	CHANNEL 0 BUSY	0.69	SECONDS	0.08	PERCENT
R 9	CHANNEL 1 BUSY	489.59	SECONDS	54.96	PERCENT
R10	CHANNEL 2 BUSY	0.0	SECONDS	0.0	PERCENT
R11	CHANNEL 4 BUSY	0.0	SECONDS	0.0	PERCENT
R12	= INSTRUCTIONS	1050961423.	COUNTS		
R13	= BUFFER FETCHES	1541317423.	COUNTS		
R14	= BLOCK FETCHES	135967915.	COUNTS		
R15	= MAIN STORAGE STORES	224307537.	COUNTS		
R16	= PAGE EXCEPTIONS	600866.	COUNTS		
R17		0.	NOT USED		
R18	CHANNEL 5 BUSY	0.0	SECONDS	0.0	PERCENT
R19	CHANNEL 6 BUSY	0.0	SECONDS	0.0	PERCENT
R20	CHANNEL 7 BUSY	439.77	SECONDS	49.37	PERCENT
R21		0.	NOT USED		
R22		0.	NOT USED		
R23		0.	NOT USED		
R24		0.	NOT USED		
R25		0.	NOT USED		
R26		0.	NOT USED		
R27		0.	NOT USED		
R28		0.	NOT USED		
R29		0.	NOT USED		
R30		0.	NOT USED		
R31		0.	NOT USED		
R32		0.	NOT USED		
R33		0.	NOT USED		
R34		0.	NOT USED		
R35		0.	NOT USED		

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CHANGE	27	1.20	3.15	6.00
DOWN	21	1.60	2.92	6.90
FIND	44	1.40	3.02	11.60
NMAS1	03	1.60	2.13	2.70
NMAS2	02	1.30	3.35	5.40
NMAS3	01	1.00	1.00	1.00
NMAS4	01	2.10	2.10	2.10
NMAS5	01	1.50	1.50	1.50
INPUT 2	20	1.00	1.01	1.10
INPUT 3	41	.90	1.04	3.10
INPUT 4	41	.90	1.00	1.20
INPUT 5	124	.90	1.24	9.50
INPUT 7	143	.90	1.00	1.50
INPUT 8	20	.90	1.00	1.20
INSERT	45	.80	1.97	4.10
LIST IN	30	1.00	1.83	6.10
TIME	94	1.00	1.82	9.00
VERIFY	18	.80	1.65	2.70
TOP	17	.80	2.20	6.60
ALL CMD	00	.00	.00	.00
SUMMEN	693	.80	1.59	11.60

START TIME= 19:55:03 END TIME= 20:10:05 RATE= .77 PER SECOND

KFA 80L IOS B=N TRIVIAL 9-7-5

J.35

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
ALLOC	30	15.20	34.78	62.80
COPY	103	69.00	124.51	186.40
DELETE	271	27.30	88.86	225.50
EDIT N	38	19.40	31.97	58.20
END	36	.90	2.09	10.80
EXEC	28	19.00	37.67	68.30
LISTCA	19	16.60	33.26	61.90
LISTOS	35	1.00	19.67	55.90
LOGON	00	.00	.00	.00
RENUM	06	2.90	5.50	8.90
SAVE	17	4.70	53.70	100.50
ALL END	00	.00	.00	.00
SUMMEN	583	.90	73.00	225.50

START TIME= 19:55:03 END TIME= 20:10:03 RATE= .64 PER SECOND

KFA 80L IOS B=N TRIVIAL 9-7-5

J.36

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
FORT	15	83.20	119.12	151.60
LOADGO	03	46.90	64.83	76.00
ALL END	00	.00	.00	.00
SUMMEN	18	46.90	110.07	151.60

START TIME= 19:55:03 END TIME= 20:10:03 RATE= .02 PER SECOND

RUN 31

SUMMARY REPORT MVS, TS ONLY, CONF. 3 7.37

REGISTER	USER IDENTIFICATION	TOTAL		AVERAGE	
R 0	REFERENCE TIMER	860.67	SECONDS		
R 1	WAIT TIME	407.40	SECONDS	47.34	PERCENT
R 2	TOTAL CPU TIME	453.26	SECONDS	52.66	PERCENT
R 3	PROBLEM PROGRAM CPU TIME	40.87	SECONDS	4.75	PERCENT
R 4	SUPERVISOR CPU TIME	412.39	SECONDS	47.92	PERCENT
R 5		0.	NOT USED		
R 6	ANY CHANNEL BUSY (EXCEPT 0)	704.90	SECONDS	81.90	PERCENT
R 7	CPU AND CHANNEL OVERLAP	348.69	SECONDS	40.51	PERCENT
R 8	CHANNEL 0 BUSY	0.86	SECONDS	0.10	PERCENT
R 9	CHANNEL 1 BUSY	456.90	SECONDS	53.09	PERCENT
R10	CHANNEL 2 BUSY	364.18	SECONDS	42.31	PERCENT
R11	CHANNEL 4 BUSY	0.0	SECONDS	0.0	PERCENT
R12	= INSTRUCTIONS	1165835697.	COUNTS		
R13	= BUFFER FETCHES	1706248602.	COUNTS		
R14	= BLOCK FETCHES	152527721.	COUNTS		
R15	= MAIN STORAGE STORES	252412954.	COUNTS		
R16	= PAGE EXCEPTIONS	721305.	COUNTS		
R17		0.	NOT USED		
R18	CHANNEL 5 BUSY	0.0	SECONDS	0.0	PERCENT
R19	CHANNEL 6 BUSY	0.0	SECONDS	0.0	PERCENT
R20	CHANNEL 7 BUSY	450.90	SECONDS	52.39	PERCENT
R21		0.	NOT USED		
R22		0.	NOT USED		
R23		0.	NOT USED		
R24		0.	NOT USED		
R25		0.	NOT USED		
R26		0.	NOT USED		
R27		0.	NOT USED		
R28		0.	NOT USED		
R29		0.	NOT USED		
R30		0.	NOT USED		
R31		0.	NOT USED		
R32		0.	NOT USED		
R33		0.	NOT USED		
R34		0.	NOT USED		
R35		0.	NOT USED		

KFA 80L 10S B=N ~~EXEC~~ 9-5-5 J.38 TIME= 5:3

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CHANGE	48	1.40	2.51	6.50
DOWN	48	1.80	3.18	7.30
FIND	76	1.50	3.10	8.30
NMAS1	06	1.80	3.18	5.10
NMAS2	05	1.10	2.14	3.50
NMAS3	05	1.00	1.38	1.90
NMAS4	05	1.10	1.70	3.50
NMAS5	05	1.10	1.84	3.00
INPUT 2	20	1.00	1.01	1.10
INPUT 3	43	.90	1.00	1.10
INPUT 4	44	.90	.99	1.10
INPUT 5	132	1.00	1.20	3.60
INPUT 7	160	.90	1.01	2.20
INPUT 8	23	.90	1.00	1.20
INSERT	94	.70	2.10	7.70
LIST IN	49	1.00	1.71	5.20
TIME	110	1.00	1.88	6.20
VERIFY	26	.90	2.03	4.00
TOP	25	.80	2.15	5.70
ALL CMD	00	.00	.00	.00
SUMMEN	924	.70	1.74	8.30

START TIME= 5:32:42 END TIME= 5:47:42 RATE= 1.02 PER SECOND

J.39

KFA 80L 10S 8=N NON-TRIVIAL 9-5-5 TIME= 5:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
ALLOC	35	18.70	27.70	56.30
COPY	107	69.40	95.69	161.10
DELETE	237	24.30	82.18	177.30
EDIT N	46	14.90	24.51	36.70
END	64	.90	2.80	8.20
EXEC	75	15.60	29.63	60.40
LISTCA	24	15.20	25.40	51.20
LISTDS	46	1.10	11.93	32.50
LOGON	00	.00	.00	.00
RENUM	22	3.60	6.13	9.50
SAVE	43	3.90	28.21	72.30
ALL CMD	00	.00	.00	.00
SUMMEN	699	.90	52.53	177.30

START TIME= 5:32:42 END TIME= 5:47:42 RATE= .77 PER SECOND

J.40

KFA 80L 10S 8=N ~~TRIVIAL~~ 9-5-5 TIME= 5:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
FORT	10	62.60	84.09	108.00
LOADGO	06	26.50	45.61	76.20
ALL CMD	00	.00	.00	.00
SUMMEN	16	26.50	69.66	108.00

START TIME= 5:32:42 END TIME= 5:47:42 RATE= .01 PER SECOND

SUMMARY REPORT MVS, TS ONLY, CONF. 4 J.41

REGISTER	USER IDENTIFICATION	TOTAL		AVERAGE	
R 0	REFERENCE TIMER	640.48	SECONDS *		
R 1	WAIT TIME	377.40	SECONDS	58.92	PERCENT
R 2	TOTAL CPU TIME	263.08	SECONDS	41.08	PERCENT
R 3	PROBLEM PROGRAM CPU TIME	28.85	SECONDS	4.50	PERCENT
R 4	SUPERVISOR CPU TIME	234.23	SECONDS	36.57	PERCENT
R 5		0.	NOT USED		
R 6	ANY CHANNEL BUSY (EXCEPT 0)	501.13	SECONDS	78.24	PERCENT
R 7	CPU AND CHANNEL OVERLAP	176.99	SECONDS	27.63	PERCENT
R 8	CHANNEL 0 BUSY	0.58	SECONDS	0.09	PERCENT
R 9	CHANNEL 1 BUSY	297.87	SECONDS	46.51	PERCENT
R10	CHANNEL 2 BUSY	0.0	SECONDS	0.0	PERCENT
R11	CHANNEL 4 BUSY	0.0	SECONDS	0.0	PERCENT
R12	= INSTRUCTIONS	681769678.	COUNTS		
R13	= BUFFER FETCHES	997079833.	COUNTS		
R14	= BLOCK FETCHES	86888048.	COUNTS		
R15	= MAIN STORAGE STORES	147244614.	COUNTS		
R16	= PAGE EXCEPTIONS	463972.	COUNTS		
R17		0.	NOT USED		
R18	CHANNEL 5 BUSY	0.0	SECONDS	0.0	PERCENT
R19	CHANNEL 6 BUSY	0.0	SECONDS	0.0	PERCENT
R20	CHANNEL 7 BUSY	421.75	SECONDS	65.85	PERCENT
R21		0.	NOT USED		
R22		0.	NOT USED		
R23		0.	NOT USED		
R24		0.	NOT USED		
R25		0.	NOT USED		
R26		0.	NOT USED		
R27		0.	NOT USED		
R28		0.	NOT USED		
R29		0.	NOT USED		
R30		0.	NOT USED		
R31		0.	NOT USED		
R32		0.	NOT USED		
R33		0.	NOT USED		
R34		0.	NOT USED		
R35		0.	NOT USED		

* SMF wurde wöchentlich erst 4 d nach Beginn der Messperiode gestartet

J.42

KFA 80L 10S B=N TRIVIAL 9-5-5 TIME= 2:4

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CHANGE	34	1.10	1.77	3.10
DOWN	36	1.50	2.38	5.70
FIND	52	1.30	2.39	4.10
NMAS1	08	1.10	1.23	1.40
NMAS2	08	1.10	1.26	1.50
NMAS3	08	1.10	1.25	1.60
NMAS4	07	1.10	1.28	1.60
NMAS5	06	1.10	1.43	2.00
INPUT 2	20	1.00	1.00	1.00
INPUT 3	41	1.00	1.01	1.50
INPUT 4	40	.90	1.00	1.20
INPUT 5	117	.90	1.15	5.60
INPUT 7	114	.90	1.02	4.30
INPUT 8	17	.90	.98	1.00
INSERT	70	.80	1.48	3.60
LIST IN	35	1.00	1.23	1.80
TIME	95	1.10	1.42	2.60
VERIFY	17	.90	1.19	2.00
TOP	17	.80	1.24	4.90
ALL CMD	00	.00	.00	.00
SUMMEN	742	.80	1.36	5.70

START TIME= 2:43:21 END TIME= 2:58:21 RATE= .82 PER SECOND

J.43

KFA 80L 10S 6=N NON-TRIVIAL 9-5-5 TIME= 2:4

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
ALLOC	47	18.10	28.67	45.10
COPY	87	79.80	137.73	240.20
DELETE	248	32.10	85.41	258.60
EDIT N	37	22.50	35.33	56.60
END	45	.90	1.88	3.50
EXEC	49	17.00	32.22	71.00
LISTCA	21	16.90	32.23	52.50
LISTDS	43	1.00	17.31	64.70
LOGON	00	.00	.00	.00
RENUM	18	2.30	4.73	8.60
SAVE	31	4.70	33.07	101.20
ALL CMD	00	.00	.00	.00
SUMMEN	626	.90	63.92	258.60

START TIME= 2:43:21 END TIME= 2:58:21 RATE= .69 PER SECOND

J.44

KFA 80L 10S B=N EXEC 9-5-5 TIME= 2:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
FORT	09	99.70	126.75	144.70
LOADGO	08	38.10	57.60	88.20
ALL CMD	00	.00	.00	.00
SUMMEN	17	38.10	94.21	144.70

START TIME= 2:43:21 END TIME= 2:58:21 RATE= .01 PER SECOND

RUN40/2

SUMMARY REPORT MVS, TS ONLY, CONF. 5 J.44a

REGISTER	USER IDENTIFICATION	TOTAL		AVERAGE	
R 0	REFERENCE TIMER	895.54	SECONDS		
R 1	WAIT TIME	583.46	SECONDS	65.15	PERCENT
R 2	TOTAL CPU TIME	312.08	SECONDS	34.85	PERCENT
R 3	PROBLEM PROGRAM CPU TIME	25.27	SECONDS	2.82	PERCENT
R 4	SUPERVISOR CPU TIME	286.81	SECONDS	32.03	PERCENT
R 5		0.	NOT USED		
R 6	ANY CHANNEL BUSY (EXCEPT 0)	646.36	SECONDS	72.18	PERCENT
R 7	CPU AND CHANNEL OVERLAP	171.40	SECONDS	19.14	PERCENT
R 8	CHANNEL 0 BUSY	0.47	SECONDS	0.05	PERCENT
R 9	CHANNEL 1 BUSY	490.63	SECONDS	54.79	PERCENT
R10	CHANNEL 2 BUSY	0.0	SECONDS	0.0	PERCENT
R11	CHANNEL 4 BUSY	0.0	SECONDS	0.0	PERCENT
R12	# INSTRUCTIONS	888894070.	COUNTS		
R13	# BUFFER FETCHES	1312933506.	COUNTS		
R14	# BLOCK FETCHES	87909665.	COUNTS		
R15	# MAIN STORAGE STORES	186405580.	COUNTS		
R16	# PAGE EXCEPTIONS	434379.	COUNTS		
R17		0.	NOT USED		
R18	CHANNEL 5 BUSY	0.0	SECONDS	0.0	PERCENT
R19	CHANNEL 6 BUSY	0.0	SECONDS	0.0	PERCENT
R20	CHANNEL 7 BUSY	388.52	SECONDS	43.38	PERCENT
R21		0.	NOT USED		
R22		0.	NOT USED		
R23		0.	NOT USED		
R24		0.	NOT USED		
R25		0.	NOT USED		
R26		0.	NOT USED		
R27		0.	NOT USED		
R28		0.	NOT USED		
R29		0.	NOT USED		
R30		0.	NOT USED		
R31		0.	NOT USED		
R32		0.	NOT USED		
R33		0.	NOT USED		
R34		0.	NOT USED		
R35		0.	NOT USED		

KFA 40L 10S B=Y TRIVIAL 9-3-5 J.446 TIME=

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CHANGE	34	1.40	4.55	12.90
DOWN	34	1.40	4.36	16.40
FIND	52	1.40	3.90	11.60
NMAS1	04	2.30	5.05	7.50
NMAS2	04	1.50	3.35	5.90
NMAS3	03	3.20	4.40	6.00
NMAS4	03	1.70	3.43	4.30
NMAS5	03	3.90	4.96	6.80
INPUT 2	11	1.00	1.09	1.30
INPUT 3	25	1.00	1.00	1.10
INPUT 4	25	1.00	1.01	1.10
INPUT 5	81	.90	1.70	13.40
INPUT 7	105	1.00	1.00	1.10
INPUT 8	16	1.00	1.00	1.00
INSERT	63	1.00	3.56	7.90
LIST IN	35	1.00	3.43	10.50
TIME	64	1.10	3.64	11.70
VERIFY	17	.90	4.25	9.00
TOP	17	1.00	5.37	12.50
ALL CMD	00	.00	.00	.00
SUMMEN	596	.90	2.75	16.40

START TIME= 0:56:09 END TIME= 1:11:09 RATE= .66 PER SECOND

J.44c

KFA 40L 10S B=Y NON-TRIVIAL 9-3-5 TIME=

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
ALLOC	28	39.30	72.05	110.00
COPY	65	145.00	244.32	385.00
DELETE	39	73.20	275.60	444.30
EDIT N	28	40.10	63.62	141.10
END	43	1.00	3.38	8.50
EXEC	50	43.60	76.67	114.30
LISTCA	14	40.60	61.23	96.80
LISTDS	29	1.30	35.83	92.40
LOGON	00	.00	.00	.00
RENUM	11	4.60	15.50	61.50
SAVE	27	4.50	84.27	167.80
ALL CMD	00	.00	.00	.00
SUMMEN	334	1.00	116.01	444.30

START TIME= 0:56:09 END TIME= 1:11:09 RATE= .37 PER SECOND

KFA 40L 10S B=Y EXEC 9-3-5 TIME=

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
FORT	05	158.10	217.76	271.50
LOADGO	04	58.90	69.42	93.50
ALL CMD	00	.00	.00	.00
SUMMEN	09	58.90	151.83	271.50

START TIME= 0:56:09 END TIME= 1:11:09 RATE= .01 PER SECOND

SUMMARY REPORT TSS, MIXED, CONF. 1 J.45

REGISTER	USER IDENTIFICATION	TOTAL		AVERAGE	
R 0	REFERENCE TIME	1251.00	SECONDS		
R 1	WAIT TIME	414.69	SECONDS	33.15	PERCENT
R 2	TOTAL CPU TIME	836.31	SECONDS	66.85	PERCENT
R 3	PROBLEM PROGRAM CPU TIME	360.80	SECONDS	28.64	PERCENT
R 4	SUPERVISOR CPU TIME	475.50	SECONDS	38.01	PERCENT
R 5		0.	NOT USED		
R 6	ANY CHANNEL BUSY (EXCEPT 0)	976.68	SECONDS	78.07	PERCENT
R 7	CPU AND CHANNEL OVERLAP	631.90	SECONDS	50.51	PERCENT
R 8	CHANNEL 0 BUSY	1.75	SECONDS	0.14	PERCENT
R 9	CHANNEL 1 BUSY	776.02	SECONDS	62.03	PERCENT
R10	CHANNEL 2 BUSY	525.30	SECONDS	41.99	PERCENT
R11	CHANNEL 4 BUSY	0.0	SECONDS	0.0	PERCENT
R12	# INSTRUCTIONS	2229349337.	COUNTS		
R13	# BUFFER FETCHES	2927718710.	COUNTS		
R14	# BLOCK FETCHES	196419217.	COUNTS		
R15	# MAIN STORAGE STORES	624784242.	COUNTS		
R16	# PAGE EXCEPTIONS	0.	COUNTS		
R17		0.	NOT USED		
R18	CHANNEL 5 BUSY	0.0	SECONDS	0.0	PERCENT
R19	CHANNEL 6 BUSY	0.0	SECONDS	0.0	PERCENT
R20	CHANNEL 7 BUSY	0.0	SECONDS	0.0	PERCENT
R21		0.	NOT USED		
R22		0.	NOT USED		
R23		0.	NOT USED		
R24		0.	NOT USED		
R25		0.	NOT USED		
R26		0.	NOT USED		
R27		0.	NOT USED		
R28		0.	NOT USED		
R29		0.	NOT USED		
R30		0.	NOT USED		
R31		0.	NOT USED		
R32		0.	NOT USED		
R33		0.	NOT USED		
R34		0.	NOT USED		
R35		0.	NOT USED		

BATCH S 21.30.13
E 21.50.38

20 MIN. 25

TIME= 21:2

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
I C	78	1.00	1.61	4.70
CH	38	1.10	1.64	3.90
INP 1	20	1.40	2.52	5.20
INP 2	40	1.30	2.15	5.70
INP 3	114	1.20	2.38	5.40
INP 4	25	1.40	1.86	2.90
LOC	51	1.30	2.42	5.20
N 10	20	1.20	1.62	3.40
NMAS 1	24	1.20	2.04	2.90
NMAS 2	27	1.10	1.82	4.20
NMAS 3	29	1.10	1.88	5.20
NMAS 4	30	1.20	1.48	2.30
NMAS 5	30	1.10	1.79	3.60
NP	20	1.20	1.56	2.50
PR	33	1.20	7.63	27.70
_REVIS	20	2.30	4.26	11.60
TSKTM	116	1.60	2.74	7.00
ALL CMD	00	.00	.00	.00
SUMMEN	715	1.00	2.42	27.70

START TIME= 21:28:47 END TIME= 21:43:47 RATE= .79 PER SECOND

J.47

TIME= 21:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CDS	02	20.50	25.20	29.90
DDEF	96	1.30	2.59	7.40
DSS?	20	1.60	2.30	4.30
_END	00	.00	.00	.00
ERASE	233	1.30	7.72	19.70
FILE	21	5.00	16.47	38.20
GAS	143	1.60	4.84	13.30
LOGON	36	3.10	7.06	13.80
PC?	20	2.40	4.87	9.70
POD?	20	2.30	5.73	14.00
PROCDE	20	3.00	11.16	27.70
QUIT	21	1.50	2.45	4.20
REDIT	12	6.50	14.00	26.00
REKEY	20	1.60	3.38	5.90
VV	31	5.60	14.06	33.20
ALL CMD	00	.00	.00	.00
SUMMEN	695	1.30	6.61	36.20

START TIME= 21:28:47 END TIME= 21:43:47 RATE= .77 PER SECOND

J.48

TIME= 21:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CALI	24	4.50	12.61	42.20
FTN	15	16.10	28.48	40.90
ALL CMD	00	.00	.00	.00
SUMMEN	39	4.50	18.72	42.20

START TIME= 21:28:47 END TIME= 21:43:47 RATE= .04 PER SECOND

SUMMARY REPORT TSS, MIXED, CONF. 2 J.49

REGISTER	USER IDENTIFICATION	TOTAL		AVERAGE	
R 0	REFERENCE TIMER	805.68	SECONDS		
R 1	WAIT TIME	149.25	SECONDS	18.52	PERCENT
R 2	TOTAL CPU TIME	656.43	SECONDS	81.46	PERCENT
R 3	PROBLEM PROGRAM CPU TIME	337.14	SECONDS	41.84	PERCENT
R 4	SUPERVISOR CPU TIME	319.29	SECONDS	39.63	PERCENT
R 5		0.	NOT USED		
R 6	ANY CHANNEL BUSY (EXCEPT 0)	602.78	SECONDS	74.82	PERCENT
R 7	CPU AND CHANNEL OVERLAP	477.91	SECONDS	59.32	PERCENT
R 8	CHANNEL 0 BUSY	1.18	SECONDS	0.15	PERCENT
R 9	CHANNEL 1 BUSY	490.25	SECONDS	60.85	PERCENT
R10	CHANNEL 2 BUSY	278.75	SECONDS	34.60	PERCENT
R11	CHANNEL 4 BUSY	0.0	SECONDS	0.0	PERCENT
R12	# INSTRUCTIONS	1797117231.	COUNTS		
R13	# BUFFER FETCHES	2239710084.	COUNTS		
R14	# BLOCK FETCHES	154503309.	COUNTS		
R15	# MAIN STORAGE STORES	528265253.	COUNTS		
R16	# PAGE EXCEPTIONS	0.	COUNTS		
R17		0.	NOT USED		
R18	CHANNEL 5 BUSY	0.0	SECONDS	0.0	PERCENT
R19	CHANNEL 6 BUSY	0.0	SECONDS	0.0	PERCENT
R20	CHANNEL 7 BUSY	0.0	SECONDS	0.0	PERCENT
R21		0.	NOT USED		
R22		0.	NOT USED		
R23		0.	NOT USED		
R24		0.	NOT USED		
R25		0.	NOT USED		
R26		0.	NOT USED		
R27		0.	NOT USED		
R28		0.	NOT USED		
R29		0.	NOT USED		
R30		0.	NOT USED		
R31		0.	NOT USED		
R32		0.	NOT USED		
R33		0.	NOT USED		
R34		0.	NOT USED		
R35		0.	NOT USED		

BATCH

12 MIN 40

7.50

TIME= 22:2

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
I C	77	1.00	1.52	4.40
CH	38	1.10	1.68	2.50
INP 1	20	1.30	1.97	2.70
INP 2	40	1.30	1.91	2.90
INP 3	112	1.20	1.95	5.00
INP 4	24	1.20	1.74	2.70
LOC	51	1.20	2.09	4.20
N 10	20	1.00	1.41	2.40
NMAS 1	24	1.20	1.86	5.30
NMAS 2	27	1.10	1.65	2.80
NMAS 3	29	1.10	1.53	2.70
NMAS 4	29	1.00	1.46	2.60
NMAS 5	28	1.10	1.55	2.40
NP	20	1.20	1.61	3.30
PR	33	1.20	3.65	8.30
_REVIS	20	1.60	3.24	4.40
TSKTM	110	1.30	2.22	5.60
ALL CMD	00	.00	.00	.00
SUMMEN	702	1.00	1.96	8.30

START TIME= 22:26:03 END TIME= 22:39:20 RATE= .88 PER SECOND

J51 TIME= 22:2

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CDS	00	.00	.00	.00
DDEF	92	1.30	2.38	5.70
DSS?	20	1.40	2.32	5.20
_END	00	.00	.00	.00
ERASE	161	1.40	3.66	14.70
FILE	20	5.20	9.77	17.10
GAS	139	1.70	3.90	14.50
LOGON	25	1.50	2.74	4.30
PC?	20	2.10	4.08	6.80
POD?	20	2.00	3.27	4.90
PROCDE	20	3.10	4.94	8.30
QUIT	20	1.40	2.11	4.40
REDIT	11	3.10	6.08	12.70
REKEY	20	1.50	2.69	4.00
VV	30	3.20	8.01	19.00
ALL CMD	00	.00	.00	.00
SUMMEN	598	1.30	3.86	19.00

START TIME= 22:26:03 END TIME= 22:39:20 RATE= .74 PER SECOND

J52 TIME= 22:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CALL	23	4.60	8.82	19.40
FTN	15	12.10	18.06	28.10
ALL CMD	00	.00	.00	.00
SUMMEN	38	4.60	12.47	28.10

START TIME= 22:26:03 END TIME= 22:39:20 RATE= .04 PER SECOND

SUMMARY REPORT TSS, MIXED, CONF. 3 J.53

REGISTER	USER IDENTIFICATION	TOTAL		AVERAGE	
R 0	REFERENCE TIMER	1250.88	SECONDS		
R 1	WAIT TIME	401.01	SECONDS	32.06	PERCENT
R 2	TOTAL CPU TIME	849.86	SECONDS	67.94	PERCENT
R 3	PROBLEM PROGRAM CPU TIME	358.71	SECONDS	28.68	PERCENT
R 4	SUPERVISOR CPU TIME	491.14	SECONDS	39.26	PERCENT
R 5		0.	NOT USED		
R 6	ANY CHANNEL BUSY (EXCEPT 0)	1054.19	SECONDS	84.28	PERCENT
R 7	CPU AND CHANNEL OVERLAP	698.53	SECONDS	55.84	PERCENT
R 8	CHANNEL 0 BUSY	1.52	SECONDS	0.12	PERCENT
R 9	CHANNEL 1 BUSY	797.34	SECONDS	63.74	PERCENT
R10	CHANNEL 2 BUSY	239.45	SECONDS	19.14	PERCENT
R11	CHANNEL 4 BUSY	0.0	SECONDS	0.0	PERCENT
R12	# INSTRUCTIONS	2262816719.	COUNTS		
R13	# BUFFER FETCHES	2981489077.	COUNTS		
R14	# BLOCK FETCHES	198630479.	COUNTS		
R15	# MAIN STORAGE STORES	630339824.	COUNTS		
R16	# PAGE EXCEPTIONS	0.	COUNTS		
R17		0.	NOT USED		
R18	CHANNEL 5 BUSY	0.0	SECONDS	0.0	PERCENT
R19	CHANNEL 6 BUSY	0.0	SECONDS	0.0	PERCENT
R20	CHANNEL 7 BUSY	566.69	SECONDS	45.30	PERCENT
R21		0.	NOT USED		
R22		0.	NOT USED		
R23		0.	NOT USED		
R24		0.	NOT USED		
R25		0.	NOT USED		
R26		0.	NOT USED		
R27		0.	NOT USED		
R28		0.	NOT USED		
R29		0.	NOT USED		
R30		0.	NOT USED		
R31		0.	NOT USED		
R32		0.	NOT USED		
R33		0.	NOT USED		
R34		0.	NOT USED		
R35		0.	NOT USED		

BATCH

20 MIN 50

TIME= 21:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
I C	76	1.10	1.49	2.70
CH	38	1.10	1.48	2.70
INP 1	20	1.50	2.59	3.90
INP 2	40	1.30	2.14	3.50
INP 3	113	1.20	2.18	4.60
INP 4	24	1.20	1.96	4.10
LOC	51	1.30	2.47	4.80
N 10	20	1.10	1.38	2.50
NMAS 1	24	1.20	1.82	3.80
NMAS 2	27	1.10	1.88	4.30
NMAS 3	28	1.00	1.46	3.00
NMAS 4	30	1.20	1.90	5.10
NMAS 5	30	1.10	1.94	4.90
NP	20	1.10	1.48	3.10
PR	33	1.10	5.59	13.20
_REVIS	20	2.10	4.53	8.00
TSKTM	116	1.40	2.81	6.30
ALL CMD	00	.00	.00	.00
SUMMEN	710	1.00	2.30	13.20

START TIME= 21:09:11 END TIME= 21:24:11 RATE= .78 PER SECOND

TIME= 21:0

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CDS	00	.00	.00	.00
DDEF	93	1.30	2.38	6.60
DSS?	20	1.70	2.89	8.90
_END	00	.00	.00	.00
ERASE	217	1.70	8.32	22.50
FILE	20	7.10	19.23	31.90
GAS	141	1.60	5.34	15.20
LOGON	35	2.70	7.34	11.70
PC?	20	1.80	5.40	16.60
POD?	20	2.50	5.61	12.60
PROCDE	20	3.40	8.04	13.20
QUIT	22	1.40	2.64	4.90
REDIT	12	4.10	12.53	18.40
REKEY	20	1.60	2.95	4.80
VV	30	6.10	15.24	32.80
ALL CMD	00	.00	.00	.00
SUMMEN	670	1.30	6.84	32.80

START TIME= 21:09:11 END TIME= 21:24:11 RATE= .74 PER SECOND

J.56

TIME= 21:2

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CDS	40	10.10	26.09	51.20
DDEF	38	1.30	2.25	5.00
DSS?	10	1.60	2.62	4.10
_END	00	.00	.00	.00
ERASE	218	1.70	7.67	20.50
FILE	00	.00	.00	.00
GAS	07	3.60	4.91	6.50
LOGON	05	4.80	7.00	8.80
PC?	10	4.00	8.80	16.50
POD?	10	3.30	6.42	10.70
PROCDE	10	4.10	6.28	8.20
QUIT	00	.00	.00	.00
REDIT	18	2.10	5.12	11.60
REKEY	00	.00	.00	.00
VV	28	6.10	15.68	41.30
ALL CMD	00	.00	.00	.00
SUMMEN	394	1.30	9.25	51.20

START TIME= 21:24:11 END TIME= 21:30:37 RATE= 1.02 PER SECOND

J.57

TIME= 21:0

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CALL	24	5.40	12.10	22.70
FTN	14	18.20	39.70	81.50
ALL CMD	00	.00	.00	.00
SUMMEN	38	5.40	22.27	81.50

START TIME= 21:09:11 END TIME= 21:24:11 RATE= .04 PER SECOND

SUMMARY REPORT TSS, MIXED, CONF. 4 J.58

REGISTER	USER IDENTIFICATION	TOTAL		AVERAGE	
R 0	REFERENCE TIMER	1150.74	SECONDS		
R 1	WAIT TIME	306.30	SECONDS	26.62	PERCENT
R 2	TOTAL CPU TIME	844.44	SECONDS	73.38	PERCENT
R 3	PROBLEM PROGRAM CPU TIME	357.57	SECONDS	31.07	PERCENT
R 4	SUPERVISOR CPU TIME	486.86	SECONDS	42.31	PERCENT
R 5		0.	NOT USED		
R 6	ANY CHANNEL BUSY (EXCEPT 0)	938.26	SECONDS	81.53	PERCENT
R 7	CPU AND CHANNEL OVERLAP	672.91	SECONDS	58.48	PERCENT
R 8	CHANNEL 0 BUSY	1.59	SECONDS	0.14	PERCENT
R 9	CHANNEL 1 BUSY	739.61	SECONDS	64.27	PERCENT
R10	CHANNEL 2 BUSY	547.85	SECONDS	47.61	PERCENT
R11	CHANNEL 4 BUSY	0.0	SECONDS	0.0	PERCENT
R12	# INSTRUCTIONS	2253520730.	COUNTS		
R13	# BUFFER FETCHES	2970329004.	COUNTS		
R14	# BLOCK FETCHES	197132277.	COUNTS		
R15	# MAIN STORAGE STORES	628404922.	COUNTS		
R16	# PAGE EXCEPTIONS	0.	COUNTS		
R17		0.	NOT USED		
R18	CHANNEL 5 BUSY	0.0	SECONDS	0.0	PERCENT
R19	CHANNEL 6 BUSY	0.0	SECONDS	0.0	PERCENT
R20	CHANNEL 7 BUSY	0.0	SECONDS	0.0	PERCENT
R21		0.	NOT USED		
R22		0.	NOT USED		
R23		0.	NOT USED		
R24		0.	NOT USED		
R25		0.	NOT USED		
R26		0.	NOT USED		
R27		0.	NOT USED		
R28		0.	NOT USED		
R29		0.	NOT USED		
R30		0.	NOT USED		
R31		0.	NOT USED		
R32		0.	NOT USED		
R33		0.	NOT USED		
R34		0.	NOT USED		
R35		0.	NOT USED		

BATCH
18 MIN 49

TIME= 0.5

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
I C	76	1.00	1.36	2.50
CH	38	1.10	1.48	3.30
INP 1	20	1.70	2.44	3.90
INP 2	40	1.30	2.28	4.10
INP 3	111	1.20	2.13	4.10
INP 4	24	1.30	2.14	3.10
LOC	50	1.30	2.31	4.30
N 10	20	1.10	1.56	3.50
NMAS 1	24	1.20	1.94	3.30
NMAS 2	27	1.10	1.71	3.30
NMAS 3	29	1.00	1.48	2.50
NMAS 4	30	1.10	1.44	2.20
NMAS 5	30	1.20	1.60	2.90
NP	20	1.10	1.58	3.00
PR	33	1.20	5.34	17.10
_REVIS	20	2.40	4.84	8.10
TSKTM	120	1.50	2.70	5.80
ALL CMD	00	.00	.00	.00
SUMMEN	712	1.00	2.23	17.10

START TIME= 0:55:36 END TIME= 1:10:36 RATE= .79 PER SECOND

J.60

TIME= 0:5

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CDS	02	11.80	13.10	14.40
DDEF	94	1.30	2.80	7.70
DSS?	20	1.40	2.98	5.50
_END	00	.00	.00	.00
ERASL	229	2.00	8.02	22.20
FILE	20	8.30	16.49	32.00
GAS	142	1.60	4.36	13.40
LOGON	37	2.70	6.10	9.70
PC?	21	2.30	5.07	9.70
POD?	20	2.30	4.30	12.70
PROCDE	20	3.70	7.76	17.10
QUIT	21	1.50	2.55	4.90
REDIT	12	2.50	9.34	19.00
REKEY	20	2.00	2.95	4.80
VV	30	6.10	12.36	28.80
ALL CMD	00	.00	.00	.00
SUMMEN	688	1.30	6.25	32.00

START TIME= 0:55:36 END TIME= 1:10:36 RATE= .76 PER SECOND

J.61

TIME= 0:55

RANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
ALL	23	4.20	14.23	38.80
TN	15	8.00	36.53	55.50
LL CMD	00	.00	.00	.00
UMMEN	38	4.20	23.03	55.50

TART TIME= 0:55:36 END TIME= 1:10:36 RATE= .04 PER SECOND

SUMMARY REPORT TSS, MIXED, CONF. 5 J.62

REGISTER	USER IDENTIFICATION	TOTAL		AVERAGE	
R 0	REFERENCE TIMER	1310.70	SECONDS		
R 1	WAIT TIME	497.26	SECONDS	37.94	PERCENT
R 2	TOTAL CPU TIME	813.44	SECONDS	62.06	PERCENT
R 3	PROBLEM PROGRAM CPU TIME	361.22	SECONDS	27.56	PERCENT
R 4	SUPERVISOR CPU TIME	452.21	SECONDS	34.50	PERCENT
R 5		0.	NOT USED		
R 6	ANY CHANNEL BUSY (EXCEPT 0)	933.86	SECONDS	71.25	PERCENT
R 7	CPU AND CHANNEL OVERLAP	530.50	SECONDS	40.47	PERCENT
R 8	CHANNEL 0 BUSY	2.00	SECONDS	0.15	PERCENT
R 9	CHANNEL 1 BUSY	768.44	SECONDS	58.63	PERCENT
R10	CHANNEL 2 BUSY	384.12	SECONDS	29.31	PERCENT
R11	CHANNEL 4 BUSY	0.0	SECONDS	0.0	PERCENT
R12	# INSTRUCTIONS	2169740619.	COUNTS		
R13	# BUFFER FETCHES	2830560885.	COUNTS		
R14	# CLOCK FETCHES	192665694.	COUNTS		
R15	# MAIN STORAGE STORES	612368143.	COUNTS		
R16	# PAGE EXCEPTIONS	0.	COUNTS		
R17		0.	NOT USED		
R18	CHANNEL 5 BUSY	0.0	SECONDS	0.0	PERCENT
R19	CHANNEL 6 BUSY	0.0	SECONDS	0.0	PERCENT
R20	CHANNEL 7 BUSY	0.0	SECONDS	0.0	PERCENT
R21		0.	NOT USED		
R22		0.	NOT USED		
R23		0.	NOT USED		
R24		0.	NOT USED		
R25		0.	NOT USED		
R26		0.	NOT USED		
R27		0.	NOT USED		
R28		0.	NOT USED		
R29		0.	NOT USED		
R30		0.	NOT USED		
R31		0.	NOT USED		
R32		0.	NOT USED		
R33		0.	NOT USED		
R34		0.	NOT USED		
R35		0.	NOT USED		

BATCH

21 MIN 21

TIME= 23:1

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
1 C	76	1.10	2.14	7.40
CH	38	1.10	2.25	5.20
INP 1	20	1.40	2.28	4.10
INP 2	40	1.30	2.37	4.70
INP 3	111	1.20	2.62	5.10
INP 4	25	1.30	2.21	3.50
LOC	50	1.50	2.59	5.00
N 10	20	1.10	2.17	4.00
NMAS 1	25	1.20	2.16	4.70
NMAS 2	27	1.00	2.15	5.20
NMAS 3	29	1.10	2.17	6.10
NMAS 4	30	1.10	2.30	5.10
NMAS 5	30	1.20	2.33	5.10
NP	20	1.10	2.26	5.70
PR	33	1.50	6.82	18.20
_REVIS	20	1.70	2.96	4.40
TSKTM	116	1.40	2.78	6.30
ALL CMD	00	.00	.00	.00
SUMMEN	710	1.00	2.64	18.20

START TIME= 23:12:37 END TIME= 23:27:37 RATE= .78 PER SECOND

J.64

TIME= 23:1

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CDS	00	.00	.00	.00
DDEF	92	1.30	2.53	5.90
DSS?	20	1.30	2.83	6.50
_END	00	.00	.00	.00
ERASE	226	1.80	8.55	20.00
FILE	20	9.40	21.57	45.80
GAS	141	1.80	7.09	18.70
LOGON	36	2.20	8.48	14.10
PC?	20	3.10	5.99	10.70
POD?	20	2.50	7.60	14.80
PROCDE	20	4.80	9.72	18.20
QUIT	21	1.40	2.70	4.70
REDIT	11	9.40	16.88	22.90
REKEY	20	1.60	3.04	5.90
VV	30	4.30	11.51	22.20
ALL CMD	00	.00	.00	.00
SUMMEN	677	1.30	7.49	45.80

START TIME= 23:12:37 END TIME= 23:27:37 RATE= .75 PER SECOND

J.65

TIME= 23:1

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CALL	24	3.20	10.90	22.60
FTN	14	8.40	18.70	30.80
ALL CMD	00	.00	.00	.00
SUMMEN	38	3.20	13.77	30.80

START TIME= 23:12:37 END TIME= 23:27:37 RATE= .04 PER SECOND

SUMMARY REPORT TSS, TS ONLY, CONF. 1 366

REGISTER	USER IDENTIFICATION	TOTAL		AVERAGE	
R 0	REFERENCE TIMER	870.58	SECONDS		
R 1	WAIT TIME	508.59	SECONDS	58.42	PERCENT
R 2	TOTAL CPU TIME	361.99	SECONDS	41.58	PERCENT
R 3	PROBLEM PROGRAM CPU TIME	80.16	SECONDS	9.21	PERCENT
R 4	SUPERVISOR CPU TIME	281.82	SECONDS	32.37	PERCENT
R 5		0.	NOT USED		
R 6	ANY CHANNEL BUSY (EXCEPT 0)	706.38	SECONDS	81.14	PERCENT
R 7	CPU AND CHANNEL OVERLAP	276.93	SECONDS	31.81	PERCENT
R 8	CHANNEL 0 BUSY	1.49	SECONDS	0.17	PERCENT
R 9	CHANNEL 1 BUSY	523.86	SECONDS	60.17	PERCENT
R10	CHANNEL 2 BUSY	450.64	SECONDS	51.76	PERCENT
R11	CHANNEL 4 BUSY	0.0	SECONDS	0.0	PERCENT
R12	# INSTRUCTIONS	1028690975.	COUNTS		
R13	# BUFFER FETCHES	1652765235.	COUNTS		
R14	# BLOCK FETCHES	49150149.	COUNTS		
R15	# MAIN STORAGE STORES	227327003.	COUNTS		
R16	# PAGE EXCEPTIONS	39.	COUNTS		
R17		0.	NOT USED		
R18	CHANNEL 5 BUSY	0.0	SECONDS	0.0	PERCENT
R19	CHANNEL 6 BUSY	0.0	SECONDS	0.0	PERCENT
R20	CHANNEL 7 BUSY	0.0	SECONDS	0.0	PERCENT
R21		0.	NOT USED		
R22		0.	NOT USED		
R23		0.	NOT USED		
R24		0.	NOT USED		
R25		0.	NOT USED		
R26		0.	NOT USED		
R27		0.	NOT USED		
R28		0.	NOT USED		
R29		0.	NOT USED		
R30		0.	NOT USED		
R31		0.	NOT USED		
R32		0.	NOT USED		
R33		0.	NOT USED		
R34		0.	NOT USED		
R35		0.	NOT USED		

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
I C	197	1.10	3.61	18.60
CH	100	1.20	3.66	8.90
INP 1	23	1.90	3.89	8.60
INP 2	45	1.60	4.76	14.80
INP 3	116	1.50	4.27	13.10
INP 4	23	1.60	3.94	13.80
LOC	142	1.50	4.78	15.60
N 10	48	1.20	3.51	14.00
NMAS 1	27	1.80	3.91	11.40
NMAS 2	27	1.80	4.21	9.70
NMAS 3	25	1.50	4.96	17.40
NMAS 4	24	1.50	2.76	6.10
NMAS 5	23	1.60	4.42	13.20
NP	51	1.30	3.70	16.70
PR	66	1.30	6.51	40.10
_REVIS	23	3.30	6.12	9.10
TSKTM	157	2.30	5.32	20.90
ALL CMD	00	.00	.00	.00
SUMMEN	1117	1.10	4.40	40.10

START TIME= 21:45:24 END TIME= 22:00:24 RATE= 1.24 PER SECOND

J.68

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CDS	78	4.70	75.67	195.40
DDEF	47	1.50	6.51	18.00
DSS?	26	2.20	8.10	20.70
_END	00	.00	.00	.00
ERASE	750	.90	8.11	155.10
FILE	02	64.40	135.95	207.50
GAS	41	2.70	6.80	17.00
LOGON	79	1.50	5.37	20.30
PC?	27	2.90	12.90	42.60
POD?	21	3.20	8.48	15.20
PROCDE	20	2.40	11.13	48.70
QUIT	01	7.00	7.00	7.00
REDIT	22	18.40	84.79	154.10
REKEY	03	4.80	6.30	9.30
VV	48	5.50	79.99	194.80
ALL CMD	00	.00	.00	.00
SUMMEN	1165	.90	17.13	207.50

START TIME= 21:30:24 END TIME= 21:45:24 RATE= 1.29 PER SECOND

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CDS	00	.00	.00	.00
DDEF	172	1.70	5.81	26.50
DSS?	23	2.00	5.46	22.80
END	00	.00	.00	.00
ERASE	116	3.10	14.45	58.60
FILE	46	12.40	65.07	148.30
GAS	126	1.80	5.54	18.10
LOGON	00	.00	.00	.00
PC?	22	2.70	6.44	16.50
POD?	28	2.30	6.07	22.50
PROCDE	23	4.70	12.74	40.10
QUIT	46	2.40	5.14	20.20
REDIT	36	29.30	58.50	100.20
REKEY	48	2.70	6.35	20.70
VV	53	10.20	39.30	113.50
ALL CMD	00	.00	.00	.00
SUMMEN	744	1.70	16.16	148.30

START TIME= 21:45:24 END TIME= 22:00:24 RATE= .82 PER SECOND

TIME= 21:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CALL	33	11.60	50.73	85.40
FTN	38	55.70	177.50	591.60
ALL CMD	00	.00	.00	.00
SUMMEN	71	11.60	118.58	591.60

START TIME= 21:45:24 END TIME= 22:00:24 RATE= .07 PER SECOND

SUMMARY REPORT TSS, TS ONLY, CONF. 2 J.71

REGISTER	USER IDENTIFICATION	TOTAL		AVERAGE	
R 0	REFERENCE TIMER	960.74	SECONDS		
R 1	WAIT TIME	490.59	SECONDS	51.06	PERCENT
R 2	TOTAL CPU TIME	470.14	SECONDS	48.94	PERCENT
R 3	PROBLEM PROGRAM CPU TIME	115.23	SECONDS	11.99	PERCENT
R 4	SUPERVISOR CPU TIME	354.90	SECONDS	36.94	PERCENT
R 5		0.	NOT USED		
R 6	ANY CHANNEL BUSY (EXCEPT 0)	794.50	SECONDS	82.70	PERCENT
R 7	CPU AND CHANNEL OVERLAP	363.27	SECONDS	37.81	PERCENT
R 8	CHANNEL 0 BUSY	1.99	SECONDS	0.21	PERCENT
R 9	CHANNEL 1 BUSY	657.06	SECONDS	68.39	PERCENT
R10	CHANNEL 2 BUSY	424.96	SECONDS	44.23	PERCENT
R11	CHANNEL 4 BUSY	0.0	SECONDS	0.0	PERCENT
R12	# INSTRUCTIONS	1332222107.	COUNTS		
R13	# BUFFER FETCHES	2126736256.	COUNTS		
R14	# BLOCK FETCHES	65288704.	COUNTS		
R15	# MAIN STORAGE STORES	298968725.	COUNTS		
R16	# PAGE EXCEPTIONS	64.	COUNTS		
R17		0.	NOT USED		
R18	CHANNEL 5 BUSY	0.0	SECONDS	0.0	PERCENT
R19	CHANNEL 6 BUSY	0.0	SECONDS	0.0	PERCENT
R20	CHANNEL 7 BUSY	0.0	SECONDS	0.0	PERCENT
R21		0.	NOT USED		
R22		0.	NOT USED		
R23		0.	NOT USED		
R24		0.	NOT USED		
R25		0.	NOT USED		
R26		0.	NOT USED		
R27		0.	NOT USED		
R28		0.	NOT USED		
R29		0.	NOT USED		
R30		0.	NOT USED		
R31		0.	NOT USED		
R32		0.	NOT USED		
R33		0.	NOT USED		
R34		0.	NOT USED		
R35		0.	NOT USED		

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
I C	162	1.10	2.59	7.30
CH	83	1.10	2.54	7.50
INP 1	33	1.80	3.66	7.20
INP 2	64	1.60	3.52	8.00
INP 3	149	1.40	3.53	8.30
INP 4	28	1.60	3.67	7.20
LOC	119	1.30	3.27	7.90
N 10	50	1.20	2.62	4.50
NMAS 1	51	1.30	3.44	8.10
NMAS 2	52	1.10	2.78	5.80
NMAS 3	54	1.30	2.49	6.40
NMAS 4	55	1.10	2.68	5.50
NMAS 5	47	1.10	3.51	7.20
NP	47	1.10	2.39	5.90
PR	63	1.20	4.32	12.00
_REVIS	33	2.00	4.68	7.20
TSKTM	217	1.30	3.99	8.10
ALL CMD	00	.00	.00	.00
SUMMEN	1327	1.10	3.28	12.00

7.72

START TIME= 20:13:50 END TIME= 20:28:50 RATE= 1.47 PER SECOND

TIME= 19:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CDS	80	3.60	50.61	152.40
DOEF	105	1.70	3.84	10.80
DSS?	28	2.20	4.08	11.60
_END	00	.00	.00	.00
ERASE	774	.90	5.61	60.40
FILE	05	9.50	28.12	59.00
GAS	76	2.10	3.86	9.30
LOGON	80	1.50	4.52	12.90
PC?	30	2.00	7.90	47.00
POD?	27	1.80	4.94	18.60
PROCDE	22	2.00	6.42	13.10
QUIT	05	1.80	2.42	3.00
REDIT	42	4.40	38.70	115.70
REKEY	08	2.20	3.86	9.10
VV	71	4.50	25.68	110.10
ALL CMD	00	.00	.00	.00
SUMMEN	1353	.90	10.13	152.40

START TIME= 19:58:50 END TIME= 20:13:50 RATE= 1.50 PER SECOND

J.74

TIME= 20:1

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CDS	00	.00	.00	.00
DDEF	249	1.50	3.89	9.20
DSS?	36	1.80	3.77	8.30
_END	00	.00	.00	.00
ERASE	143	1.80	6.42	28.90
FILE	52	7.00	38.73	204.40
GAS	154	1.70	4.13	8.90
LOGON	03	3.00	5.36	7.10
PC?	34	2.10	4.39	9.70
POD?	35	1.80	3.93	7.40
PROCDE	34	3.30	5.69	12.00
QUIT	52	1.20	3.30	6.60
REDIT	35	2.90	38.12	78.80
REKEY	52	1.70	4.37	8.00
VV	70	5.00	24.77	93.10
ALL CMD	00	.00	.00	.00
SUMMEN	949	1.20	9.10	204.40

START TIME= 20:13:50 END TIME= 20:28:50 RATE= 1.05 PER SECOND

J.75

TIME= 20:1

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CALL	50	6.00	37.00	62.60
FTN	50	15.00	101.33	237.50
ALL CMD	00	.00	.00	.00
SUMMEN	100	6.00	69.16	237.50

START TIME= 20:13:50 END TIME= 20:28:50 RATE= .11 PER SECOND

SUMMARY REPORT TSS, TS ONLY, CONF. 3 J.76

REGISTER	USER IDENTIFICATION	TOTAL		AVERAGE	
R 0	REFERENCE TIMER	895.64	SECONDS		
R 1	WAIT TIME	522.28	SECONDS	58.31	PERCENT
R 2	TOTAL CPU TIME	373.36	SECONDS	41.69	PERCENT
R 3	PROBLEM PROGRAM CPU TIME	65.75	SECONDS	9.57	PERCENT
R 4	SUPERVISOR CPU TIME	287.61	SECONDS	32.11	PERCENT
R 5		0.	NOT USED		
R 6	ANY CHANNEL BUSY (EXCEPT 0)	775.57	SECONDS	86.59	PERCENT
R 7	CPU AND CHANNEL OVERLAP	308.79	SECONDS	34.48	PERCENT
R 8	CHANNEL 0 BUSY	1.55	SECONDS	0.17	PERCENT
R 9	CHANNEL 1 BUSY	524.56	SECONDS	58.57	PERCENT
R10	CHANNEL 2 BUSY	186.99	SECONDS	20.88	PERCENT
R11	CHANNEL 4 BUSY	0.0	SECONDS	0.0	PERCENT
R12	# INSTRUCTIONS	1056813410.	COUNTS		
R13	# BUFFER FETCHES	1700283314.	COUNTS		
R14	# BLOCK FETCHES	50498653.	COUNTS		
R15	# MAIN STORAGE STORES	233999933.	COUNTS		
R16	# PAGE EXCEPTIONS	36.	COUNTS		
R17		0.	NOT USED		
R18	CHANNEL 5 BUSY	0.0	SECONDS	0.0	PERCENT
R19	CHANNEL 6 BUSY	0.0	SECONDS	0.0	PERCENT
R20	CHANNEL 7 BUSY	513.64	SECONDS	57.37	PERCENT
R21		0.	NOT USED		
R22		0.	NOT USED		
R23		0.	NOT USED		
R24		0.	NOT USED		
R25		0.	NOT USED		
R26		0.	NOT USED		
R27		0.	NOT USED		
R28		0.	NOT USED		
R29		0.	NOT USED		
R30		0.	NOT USED		
R31		0.	NOT USED		
R32		0.	NOT USED		
R33		0.	NOT USED		
R34		0.	NOT USED		
R35		0.	NOT USED		

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
I C	201	1.10	2.84	7.60
CH	101	1.10	2.77	6.70
INP 1	21	1.40	4.02	6.80
INP 2	43	1.80	3.66	8.50
INP 3	106	1.50	3.41	8.70
INP 4	22	1.50	3.44	7.70
LOC	145	1.40	3.90	7.90
N 10	52	1.10	2.94	7.70
NMAS 1	27	1.70	4.10	8.50
NMAS 2	26	2.20	3.80	7.40
NMAS 3	23	1.60	3.32	5.70
NMAS 4	23	1.80	3.99	7.10
NMAS 5	22	2.00	3.57	6.00
NO	53	1.10	2.79	5.60
PR	68	1.20	5.55	31.70
REVIS	22	4.70	6.83	9.30
TSKTM	156	2.30	4.87	10.30
ALL CMD	00	.00	.00	.00
SUMMEN	1111	1.10	3.73	31.70

J. 77

START TIME= 22:33:07 END TIME= 22:48:07 RATE= 1.23 PER SECOND

TIME= 22:1

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CDS	80	5.50	96.27	235.70
DDEF	41	2.00	6.31	17.70
DSS?	25	2.00	6.30	13.90
_END	00	.00	.00	.00
ERASE	758	.90	7.67	81.70
FILE	01	58.10	58.10	58.10
GAS	44	2.40	5.31	11.20
LOGON	80	1.70	6.14	27.10
PC?	26	3.00	9.50	30.80
PDD?	23	2.70	7.35	32.30
PROCDE	20	2.70	8.55	25.20
QUIT	01	3.50	3.50	3.50
REDIT	27	53.10	87.36	164.10
REKEY	04	4.10	7.70	11.70
VV	50	9.80	69.75	189.50
ALL CMD	00	.00	.00	.00
SUMMEN	1180	.90	17.95	235.70

START TIME= 22:18:07 END TIME= 22:33:07 RATE= 1.31 PER SECOND

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CDS	00	.00	.00	.00
DDEF	185	1.50	4.09	11.50
DSS?	21	1.90	4.66	7.90
_END	00	.00	.00	.00
ERASE	119	3.30	8.17	31.50
FILE	49	13.50	68.93	206.60
GAS	109	1.90	5.04	12.60
LOGON	00	.00	.00	.00
PC?	21	3.00	4.67	8.70
POO?	22	2.10	5.24	8.40
PROCDE	22	4.80	10.78	31.70
QUIT	49	1.70	3.95	7.70
REDIT	35	41.20	65.66	102.50
REKEY	50	2.60	6.40	57.60
VV	56	9.90	45.24	94.00
ALL CMD	00	.00	.00	.00
SUMMEN	738	1.50	15.65	206.60

J.79

START TIME= 22:33:07 END TIME= 22:48:07 RATE= .82 PER SECOND

J.80

TIME= 22:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CALL	34	12.10	65.13	106.40
FTN	40	73.70	176.70	627.50
ALL CMD	00	.00	.00	.00
SUMMEN	74	12.10	125.44	627.50

START TIME= 22:33:07 END TIME= 22:48:07 RATE= .08 PER SECOND

SUMMARY REPORT TSS, TS ONLY, CONF. 4 J.81

REGISTER	USER IDENTIFICATION	TOTAL		AVERAGE	
R 0	REFERENCE TIMER	906.02	SECONDS		
R 1	WAIT TIME	501.00	SECONDS	55.30	PERCENT
R 2	TOTAL CPU TIME	405.03	SECONDS	44.70	PERCENT
R 3	PROBLEM PROGRAM CPU TIME	87.23	SECONDS	9.63	PERCENT
R 4	SUPERVISOR CPU TIME	317.79	SECONDS	35.08	PERCENT
R 5		0.	NOT USED		
R 6	ANY CHANNEL BUSY (EXCEPT 0)	752.14	SECONDS	83.02	PERCENT
R 7	CPU AND CHANNEL OVERLAP	320.03	SECONDS	35.32	PERCENT
R 8	CHANNEL 0 BUSY	1.41	SECONDS	0.16	PERCENT
R 9	CHANNEL 1 BUSY	554.25	SECONDS	61.17	PERCENT
R10	CHANNEL 2 BUSY	505.99	SECONDS	55.85	PERCENT
R11	CHANNEL 4 BUSY	0.0	SECONDS	0.0	PERCENT
R12	# INSTRUCTIONS	1153076977.	COUNTS		
R13	# BUFFER FETCHES	1851654763.	COUNTS		
R14	# BLOCK FETCHES	55242266.	COUNTS		
R15	# MAIN STORAGE STORES	255543665.	COUNTS		
R16	# PAGE EXCEPTIONS	45.	COUNTS		
R17		0.	NOT USED		
R18	CHANNEL 5 BUSY	0.0	SECONDS	0.0	PERCENT
R19	CHANNEL 6 BUSY	0.0	SECONDS	0.0	PERCENT
R20	CHANNEL 7 BUSY	0.0	SECONDS	0.0	PERCENT
R21		0.	NOT USED		
R22		0.	NOT USED		
R23		0.	NOT USED		
R24		0.	NOT USED		
R25		0.	NOT USED		
R26		0.	NOT USED		
R27		0.	NOT USED		
R28		0.	NOT USED		
R29		0.	NOT USED		
R30		0.	NOT USED		
R31		0.	NOT USED		
R32		0.	NOT USED		
R33		0.	NOT USED		
R34		0.	NOT USED		
R35		0.	NOT USED		

TIME= 21:0

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
I C	180	1.10	3.21	10.60
CH	90	1.20	3.28	11.00
INP 1	22	2.40	4.84	8.80
INP 2	51	1.90	4.57	10.10
INP 3	116	1.50	4.85	11.70
INP 4	21	1.90	3.54	7.50
LOC	135	1.70	5.22	12.90
N 10	46	1.20	3.80	10.10
NMAS 1	27	2.10	4.48	7.70
NMAS 2	27	1.70	4.35	9.10
NMAS 3	25	1.80	4.32	11.70
NMAS 4	24	2.10	4.96	10.00
NMAS 5	23	1.80	4.87	12.30
NP	45	1.20	4.16	8.70
PR	62	1.40	6.19	26.10
_REVIS	19	5.20	8.97	13.50
TSKTM	158	1.90	6.55	12.80
ALL CMD	00	.00	.00	.00
SUMMEN	1071	1.10	4.75	26.10

START TIME= 21:02:06 END TIME= 21:17:06 RATE= 1.19 PER SECOND

TIME= 20:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CDS	80	5.50	70.43	161.60
DDEF	31	2.00	8.06	47.00
DSS?	26	2.10	7.33	51.80
_END	00	.00	.00	.00
ERASE	753	.90	12.92	110.00
FILE	03	106.00	134.50	160.60
GAS	41	2.60	7.34	16.00
LOGON	80	1.50	11.16	66.30
PC?	27	3.50	15.78	82.30
POD?	22	3.20	7.96	16.00
PROCDE	20	3.60	14.07	72.30
QUIT	02	4.40	7.00	9.60
REDIT	18	6.30	67.63	120.40
REKEY	04	3.70	7.25	10.60
VV	41	8.90	65.05	148.50
ALL_CMD	00	.00	.00	.00
SUMMEN	1148	.90	19.36	161.60

START TIME= 20:47:06 END TIME= 21:02:06 RATE= 1.27 PER SECOND

J.84

TIME= 21:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CDS	00	.00	.00	.00
DDEF	165	2.20	5.79	15.00
DSS?	19	1.90	6.00	11.80
_END	00	.00	.00	.00
ERASE	125	3.50	13.50	57.60
FILE	47	14.10	71.83	166.10
GAS	109	3.20	7.07	12.60
LOGON	00	.00	.00	.00
PC?	19	3.30	6.73	12.10
POD?	23	2.20	6.70	13.40
PROCDE	20	6.50	11.77	26.10
QUIT	48	2.20	5.71	13.40
REDIT	42	10.90	60.64	109.60
REKEY	46	3.10	7.63	14.40
VV	64	14.50	54.99	125.20
ALL CMD	00	.00	.00	.00
SUMMEN	727	1.90	19.42	166.10

START TIME= 21:02:06 END TIME= 21:17:06 RATE= .80 PER SECOND

J.85

TIME= 21

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CALL	31	15.90	63.47	121.40
FTN	39	48.80	164.65	317.50
ALL CMD	00	.00	.00	.00
SUMMEN	70	15.90	119.84	317.50

START TIME= 21:02:06 END TIME= 21:17:06 RATE= .07 PER SECOND

SUMMARY REPORT TSS, TS ONLY, CONF. 5 J.86

REGISTER	USER IDENTIFICATION	TOTAL		AVERAGE	
R 0	REFERENCE TIMER	930.97	SECONDS		
R 1	WAIT TIME	548.65	SECONDS	58.93	PERCENT
R 2	TOTAL CPU TIME	382.32	SECONDS	41.07	PERCENT
R 3	PROBLEM PROGRAM CPU TIME	99.48	SECONDS	10.69	PERCENT
R 4	SUPERVISOR CPU TIME	282.84	SECONDS	30.38	PERCENT
R 5		0.	NOT USED		
R 6	ANY CHANNEL BUSY (EXCEPT 0)	690.30	SECONDS	74.15	PERCENT
R 7	CPU AND CHANNEL OVERLAP	248.63	SECONDS	26.71	PERCENT
R 8	CHANNEL 0 BUSY	2.04	SECONDS	0.22	PERCENT
R 9	CHANNEL 1 BUSY	550.02	SECONDS	59.08	PERCENT
R10	CHANNEL 2 BUSY	327.93	SECONDS	35.22	PERCENT
R11	CHANNEL 4 BUSY	0.0	SECONDS	0.0	PERCENT
R12	# INSTRUCTIONS	1074574102.	COUNTS		
R13	# BUFFER FETCHES	1731400304.	COUNTS		
R14	# BLOCK FETCHES	51645282.	COUNTS		
R15	# MAIN STORAGE STORES	241689022.	COUNTS		
R16	# PAGE EXCEPTIONS	52.	COUNTS		
R17		0.	NOT USED		
R18	CHANNEL 5 BUSY	0.0	SECONDS	0.0	PERCENT
R19	CHANNEL 6 BUSY	0.0	SECONDS	0.0	PERCENT
R20	CHANNEL 7 BUSY	0.0	SECONDS	0.0	PERCENT
R21		0.	NOT USED		
R22		0.	NOT USED		
R23		0.	NOT USED		
R24		0.	NOT USED		
R25		0.	NOT USED		
R26		0.	NOT USED		
R27		0.	NOT USED		
R28		0.	NOT USED		
R29		0.	NOT USED		
R30		0.	NOT USED		
R31		0.	NOT USED		
R32		0.	NOT USED		
R33		0.	NOT USED		
R34		0.	NOT USED		
R35		0.	NOT USED		

TIME= 19:3

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
I C	195	1.20	3.17	8.30
CH	94	1.20	3.26	9.90
INP 1	27	1.80	3.41	8.00
INP 2	49	1.50	3.62	8.80
INP 3	111	1.30	3.76	8.90
INP 4	20	1.60	2.80	6.20
LOC	119	1.20	3.71	9.40
N 10	55	1.10	2.96	9.60
NMAS 1	43	1.30	2.87	7.20
NMAS 2	45	1.20	3.38	8.30
NMAS 3	42	1.30	3.12	9.00
NMAS 4	34	1.30	3.39	9.70
NMAS 5	32	1.40	2.97	6.60
NP	50	1.30	3.01	8.20
PR	62	1.40	4.65	22.90
_REVIS	27	2.40	4.75	8.90
TSKTM	181	1.60	3.78	9.80
ALL CMD	00	.00	.00	.00
SUMMEN	1191	1.10	3.49	22.90

START TIME= 19:30:11 END TIME= 19:45:11 RATE= 1.32 PER SECOND

TIME= 19:15:

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CDS	80	4.30	89.91	193.70
DDEF	88	1.40	2.95	9.30
DSS?	27	1.50	3.10	8.50
END	00	.00	.00	.00
ERASE	763	1.10	3.55	16.20
FILE	01	79.80	79.80	79.80
GAS	73	1.70	3.29	7.40
LOGON	80	1.50	2.71	4.60
PC?	27	2.10	4.49	11.00
POD?	26	1.70	3.88	8.30
PROCDE	20	2.30	7.59	33.30
QUIT	00	.00	.00	.00
REDIT	39	29.00	66.41	177.70
REKEY	03	1.90	2.73	3.50
VV	64	6.20	50.02	161.50
ALL CMD	00	.00	.00	.00
SUMMEN	1291	1.10	13.13	193.70

START TIME= 19:15:11 END TIME= 19:30:11 RATE= 1.43 PER SECOND

J.89

TIME= 19:3

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CDS	00	.00	.00	.00
DDEF	195	1.50	3.54	9.40
DSS?	33	1.50	3.56	6.50
_END	00	.00	.00	.00
ERASE	138	2.00	5.78	32.40
FILE	56	7.80	65.19	215.40
GAS	127	1.80	4.08	9.70
LOGON	00	.00	.00	.00
PC?	33	2.30	5.59	37.80
POD?	34	1.70	3.90	10.00
PROCDE	29	3.10	6.46	22.90
QUIT	57	1.50	3.77	11.20
REDIT	21	5.30	52.29	73.70
REKEY	57	2.10	4.52	10.60
VV	55	5.50	38.01	90.60
ALL CMD	00	.00	.00	.00
SUMMEN	835	1.50	11.90	215.40

START TIME= 19:30:11 END TIME= 19:45:11 RATE= .92 PER SECOND

J.90

TIME= 19:3

TRANSACTION ID	NUMBER	LOW RESPONSE	AVG RESPONSE	HIGH RESPONSE
CALL	47	22.00	56.91	101.50
FTN	39	23.40	110.50	690.60
ALL CMD	00	.00	.00	.00
SUMMEN	86	22.00	81.21	690.60

START TIME= 19:30:11 END TIME= 19:45:11 RATE= .09 PER SECOND