

**MINISIS USERS' GROUP  
MEETING 1991**

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Esta serie incluye ponencias de reuniones, informes internos y documentos técnicos que pueden posteriormente conformar la base de una publicación formal. El informe recibe distribución limitada entre una audiencia altamente especializada.

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**Proceedings**  
of the 12th Annual  
MINISIS Users' Group Meeting

**Compte rendu**  
de la 12<sup>e</sup> Réunion annuelle  
du Groupe des Utilisateurs de MINISIS



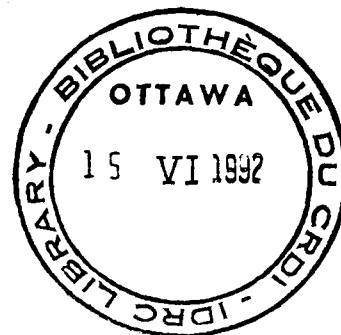
MUG '91

**United Nations Economic Council for Latin America and the Caribbean (UN-ECLAC)**  
**and the University of the West Indies (UWI)**

**le Conseil économique des Nations Unies pour l'Amérique latine et les Caraïbes**  
**(UN-CEPALC)**  
**et la University of the West Indies (UWI)**

**Port of Spain, Trinidad and Tobago**  
**April 29 – May 3, 1991**

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Authors

# MINISIS System Management

*Richard Palmer*

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## Introduction to the HP3000

The HP3000 is a full family of mini computers, starting from the basic 10 workstation system to over 400 workstations.

It can do interactive or batch processing.

The system comes with hardware, and software which is called FOS (Fundamental Operating System).

The FOS contains:

\* MPE

\* Editor

\* IMAGE

\* FCOPY

\* KSAM

\* SORT/MERGE

\* VPLUS

\* on the Micro 3000: the FOS should also contain HPEasytime.

COBOL, RPG, FORTRAN, BASIC, PASCAL, SPL, C compilers can be purchased.

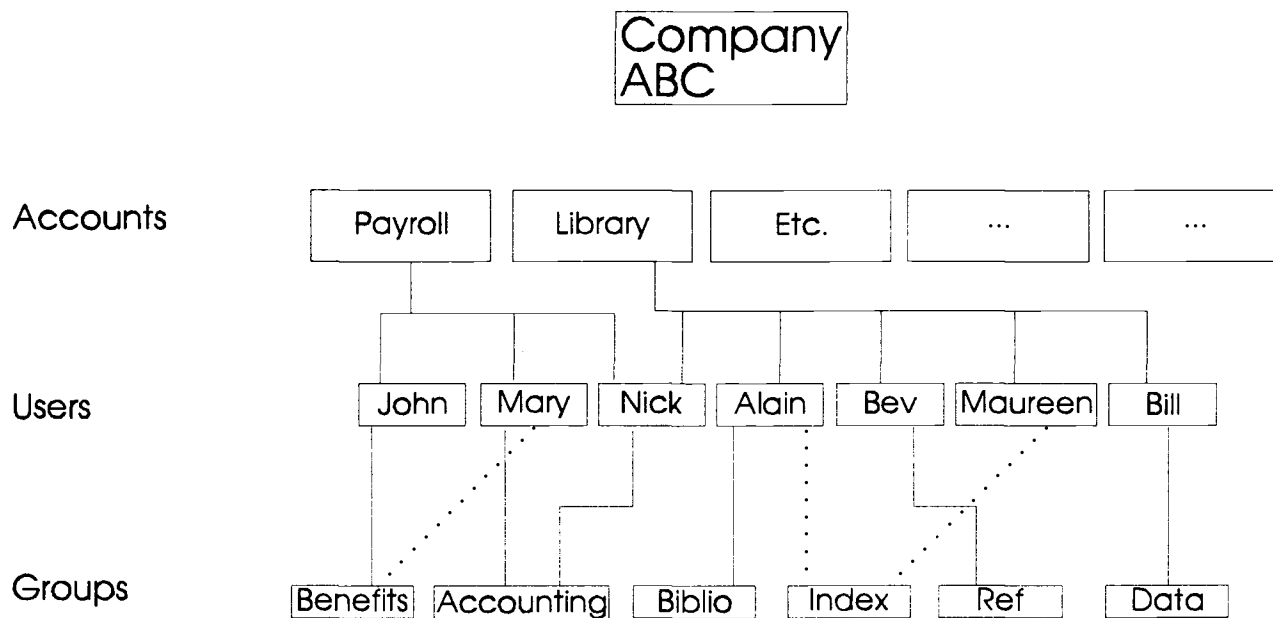


**Account Structure****Structure**

HP3000      Whole company  
Account      Division in the company (Marketing,  
Payroll, Library)

**Structure**

Users      People working in the divisions  
Groups      Cabinets or rooms containing files  
Files      The data itself

**Example:****Account Structure of a Company**

## Capabilities

These capabilities are available on the system:

AL	*	Account Librarian	:to manage files in an account
AM	*	Account Manager	:to manage an account
BA	*	Batch Access	:to stream batch jobs
CS		Communication subs.	:to use communication subsystem (MRJE
CV		Create Volumes	:to create private volumes
DI		Diagnostician	:system diagnostic (HP)
DS	*	Extra Data Segment	:to create extra data segment
GL		Group Librarian	:to manage files in a group
IA	*	Interactive Access	:to logon as a session
MR	*	Multiple RIN's	:to lock more than one RIN (RIN: Resource Identification #)
ND	*	Non-Sharable Device	:to be able to use some devices (LP)
OP		Operator	:to manage the operations of the system
PH	*	Process Handling	:to run more than one process
PM		Privilege Mode	:to do anything in memory
SF	*	Save File	:to be able to save files
SM		System Manager	:to configure & manage the system
UV		Use Volumes	:to use private volumes
LG		Use User Logging Facility	:allows owner to use user logging commands
NM		Mode Manager	:to configure & manage nodes on a LAN
NA		Network Administrator	:to configure & administer NS & LAN
PS		Programmatic Session	:permits use of STARTSESS command
LOCATTR	*	Local Attribute	:up to you!

\* Capabilities used by MINISIS.

## Default Capabilities

Accounts	:AM,AL,GL,SF,ND,IA,BA
Groups	:IA,BA
Users	:AM,AL,GL,SF,ND,IA,BA

---

## Security

security can be defined on Accounts, Groups and Files.

security codes are:

R	Read	:to read a file
W	Write	:to write on a file
A	Append	:to append on a file
L	Lock	:to be able to lock the file
X	Execute	:to be able to execute the file (program)
S	Save	:on group only

these security codes can be given to different user

levels:

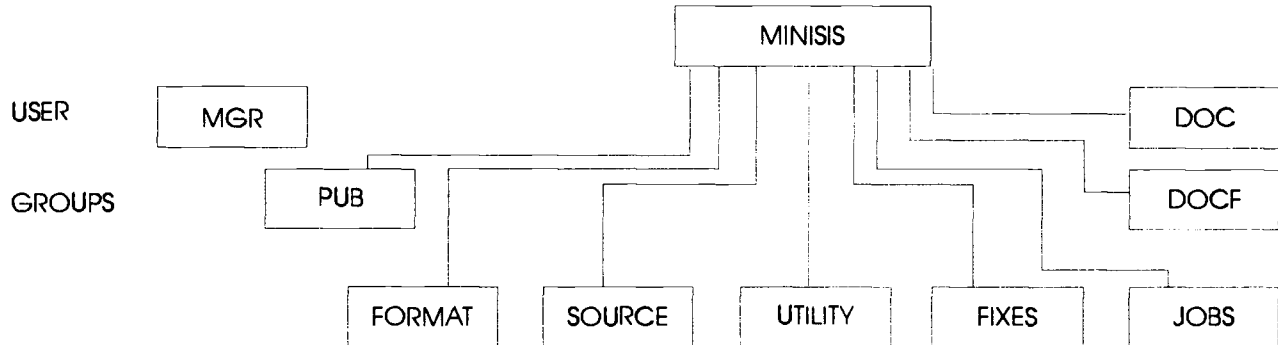
AC	Account	:users of this account
AL	Acct. Librarian	:users who have AL capability
GU	Group Users	:users who logon in this group
GL	Group Librarian	:users who have GL capability
CR	Creator	:user who is the creator of the file
ANY	Anyone	:Everyone have access

### RELEASE/SECURE

- releasing or securing files overrides all security
- it is not recommended to leave files in the RELEASED state

## The MINISIS Account:

### ACCOUNT



### User

- MGR

*general use for maintenance*

### Groups

- PUB

*message files*

*processors*

*error files*

*syntax files*

*SYSDICTN data files*

*OBJDKEYD and system inverted files*

*SL*

### SOURCE

- MINISIS programming tools in source form
- include files (Copyright, etc)
- to assist programmers in writing application programmes

### UTILITY

- MINISIS utility programs: BATCHIN, FIXXREF, GARBAGE, MINEDIT,

RENUM, ...

## DOC

- MINISIS documentation: English version

## DOCF

- MINISIS documentation: French version

## FIXES

- Database of fixes and reported problems made to MINISIS

## JOBS

- Jobs for SHOWJOBLIB

## FORMAT

- Print formats

Try keeping MINISIS as a separate account. Do not have other applications running in the MINISIS account and do not put the MINISIS system software in other applications' accounts. It is difficult to control the security and the system data bases and application data bases will be mixed up in the OBJDKEYD file.

## Capability and security needed

### Account (MINISIS):

#### Capability

IA,BA,PH,DS,MR,SF,ND,AM,AL,UV,LG;LOCATTR=%7

#### Security

R,X:ANY W,A,L:AC

### User (MGR):

#### Capability

IA,BA,PH,DS,SF,ND,MR,AM,AL,UV,LG;LOCATTR=%5

#### Security

NONE on a user

Note: For the "LOCATTR" capability, the value given to a user must be <M= the value given to the account.

### Groups:

PUB / UTILITY / SOURCE / FORMAT / FIXES / JOBS / DOC / DOCF

capability: IA,BA,PH,DS,MR

security: R,X:ANY W,A,L,S:AC

Note: The OBJDKEYD file must be released.

## MINISIS Installation

1. Create the MINISIS account with capabilities and security as described above.

2. Restore 2 files from the MINISIS tape:

i) JOBGROUP.PUB.MINISIS

ii) JOBLOAD.PUB.MINISIS

### 3. Stream JOBGROUP.PUB.MINISIS.

Note: Remember to add any passwords in the job.

The JOBGROUP job will create all the new groups needed with the appropriate capabilities and modify the capabilities for the PUB group as well.

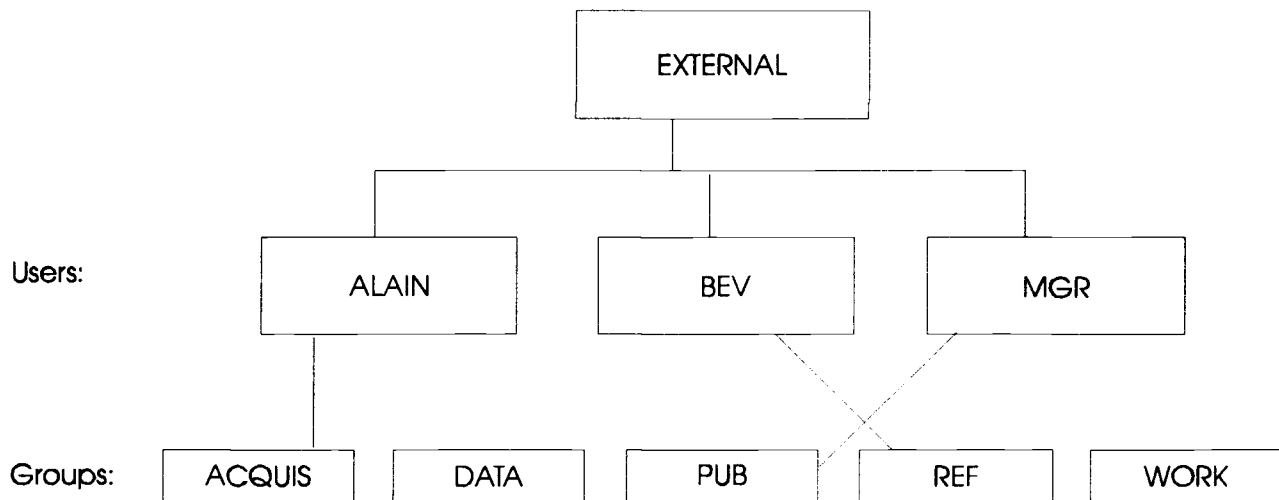
### 4. Stream JOBLOAD.PUB.MINISIS.

This job will load everything from the tape into the MINISIS account using the "RESTORE" command.

Example of JOBLOAD:  
 !JOB JOBLOAD,MGR.MINISIS  
 !FILE TAPE;DEV=TAPE  
 !RESTORE \*TAPE:@.@.MINISIS;show  
 !LISTF @.@.MINISIS,2  
 !EOJ

## MINISIS Update

To update to a new version of MINISIS, you only need to "RESTORE" over what was previously in the MINISIS account but it is recommended that you purge all files from the account first.



## Creation of an account from which MINISIS will be run

### Account

- NEWACCT  
EXTERNAL,MGR;ACCESS=(R,W,A,L,X:AC);LOCATTR=7

NOTE: Only the system manager is able to create new accounts.

### Users

- NEWUSER  
ALAIN;HOME=ACQUIS;LOCATTR=x
- NEWUSER  
BEV;HOME=REF;LOCATTR=x
- ALTUSER MGR;LOCATTR=5

NOTE: The account manager (MGR) can add/delete users only within the account.

### Groups

- NEWGROUP ACQUIS;
- NEWGROUP REF;
- NEWGROUP WORK;
- NEWGROUP  
DATA;ACCESS=(R,W,A,L,X,S:AC)
- ALTGROUP  
PUB;ACCESS=(R,W,A,L,X,S:AC)

NOTE: The account manager (MGR) can add/delete groups only within the account.

## Running MINISIS From Another Account

To run MINISIS from another account, you will need to set up some file equations in the new account so they can refer to those files in the MINISIS account.

Example:

```
FILE MESS00.PUB=MESS00.PUB.MINISIS
FILE ERR00.PUB=ERR00.PUB.MINISIS
FILE SYN00.PUB=SYN00.PUB.MINISIS
Make sure the OBJDKEYD file is released.
```

To run MINISIS from another account, type :

```
RUN MINISIS.PUB.MINISIS;LIB=P
(LIB=P: calls up the intrinsic routine from
the SL in the PUB group of the MINISIS
account)
```

You can set up a UDC file and do a SETCATALOG on the new account so you won't have to type in the files equations all the time.

## Files and Files Equation for MINISIS

### I MINISIS Files

#### Files for the entire system

OBJDKEYD.PUB.MINISIS

(this file must be released)

#### Files in the PUB group of the user application account

generally will be taken from MINISIS account

- MESSxx  
SYNxx  
ERRxx  
xx - 00 - English  
01 - French  
02 - Spanish
- LOG00  
- error messages that have been flagged
- LOCKTABL

- database and records that are locked

- **TERMHDLR** (opt)
  - terminal handler file
- **DBSRCH**
  - the text being display for the FILE command in QUERY

### Description of specific MINISIS files

- **Master and Xref file** (2110,2120)
  - name specified by user
- **- Btree files** (2100)
- **KSAM files** (KSAM,KSAMK)
  - xxxxDIR, xxxxKEYD
- **Print format file** (2000)
  - name specified by user
- **INDEX files** (2020-2024)
  - xxxxxx, xxxxxxDD output file
- late jobfile
- xxxxxxxx keep file
- **QUERY files** (2030-2034)
  - xxxxxx, xxxxxxDD output file
- Qate user expression
- xxxxxxxx keep file
- **Restrict files** (2040,2042)
  - Xate , Jate open and close
- transparent to user sessions
- should be temporary
- **MODIFY files** (global) (2050,2052)
  - Mate modify commands

- Jate modify job

- **COMPUTE files** (2060-2062)
  - xxxxxx, xxxxxxDD output file

- Cate job file

### **II File Equations**

Goal : to redirect a file, by changing one of the default parameters.

#### Why ?

- access another file, access to another account
- send output elsewhere than the terminal or printer (eg.: disc, laser, etc.)
- receive input from elsewhere also
- override the default parameters
- run MINISIS from any account in the system

---

### **Run MINISIS From Any Account**

We know that OBJDKEYD will be accessed by MINISIS from everywhere in the system, so, we don't have to re-direct this file.

We could copy the MESSxx, SYNxx and ERRxx files into the PUB group of the account where we want to run MINISIS, but, this would be duplication of data, and take space for no reason. The solution is to do some file equations that will refer from those files to the ones in the MINISIS account:



```
FILE MESS00.PUB=MESS00.PUB.MINISIS
FILE ERR00.PUB=ERR00.PUB.MINISIS
FILE SYN00.PUB=SYN00.PUB.MINISIS
```

## Re-direct Output From Processor

Each processor has a file name for its output. By changing some parameters, we can re-direct this file.

BATCHIN	->>	OUTFL
		ERRFL
DATADEF	->>	LPFILE
FIXXREF	->>	DUMP
GARBAGE	->>	GARBG
INVERT	->>	OUTFL
		ERRFL
ISOCONV	->>	ISOLIST
LISTDDT	->>	LPFILE
LISTFORMAT	->>	LFRMT
MINEDIT	->>	EDTLIST
UPDATE	->>	OUTFL
		ERRFL
QUERY	->>	OUTFL
		SEARCH
PRINT	->>	OUTFL
RECOVERY	->>	RECOVERY
SDIPRINT	->>	SDIPRINT
SYNCOMP	->>	DUMP
		COMPLIST
THLOADER	->>	THESLIST

You can redirect the output that is going normally to the line printer, to the terminal.

Eg: If you do a garbage, and want the listing of the available ISNs to be printed on your terminal instead of the printer, you can do:

```
FILE GARBG=$STDLIST
```

before running the processor. Or, if you do not want that list to be printed at all, just do:

```
FILE GARBG=$NULL
```

## User Define Command (UDC)

### Advantage

- Allows you to define your own commands
- will do some automatic actions (logon)
- can save a lot of keystrokes
- easy to maintain (editor file)

### UDC for MINISIS

- Logon file equations
 

```
LOGON
OPTION LOGON
FILE MESS00.PUB=MESS00.PUB.MINISIS
FILE ERR00.PUB=ERR00.PUB.MINISIS
FILE SYN00.PUB=SYN00.PUB.MINISIS
```
- Running MINISIS
 

```
MINISIS
RUN MINISIS.PUB.MINISIS;LIB=P
```

Now that we have define our editor file, we can tell the system to recognise these commands, with:

```
SETCATALOG editorfile;ACCOUNT
```

In the future, when we logon, the 3 files equations will automatically be done when we logon, and, to run MINISIS, we only have to type "MINISIS".

You can also have other equations to point to the French and/or Spanish version of MINISIS.

## Space Management

### What is wasted space on the system ?

- Wasted space is space occupied by information (programs or files) which is no longer used.

**Consequences**

- uses a lot of space on the system
- more difficult to manage the system
- disc space is more fragmented

**Who and what generates wasted space ?****MPE**

- LOG files in PUB.SYS
- Workfiles (Editor, TDP, ...)
- Subsystems that are not used (MRJE, INP, SUPPORT ...)

**MINISIS**

- temporary files (Wxxxxxx, Kxxxxxx)
- user
- hitfile
- index output
- query output
- old print format
- test database
- PURGE DB without KEEP=NO
- ISO file on disc
- TMASTER file on disc
- master files created too large
- inverted files created too large

- LOG00 files

- audit trail file

**USERS**

- create files and leave them on the system
- workfile of editors

**What can we do ?**

- Check for large files whose purpose we don't know about
- Purge, or store and purge, logfiles in PUB.SYS
- use the same hitfile name
- each user should have his own home group so all hitfiles can be traced back to the homegroup
- Check for temporary files on the system. Normally they are in the format ANNNNNNN, so try:  
LISTF @#####.@.@,2
- Purge them if they are more than a few days old.
- Check for old hitfiles. They are more difficult to trace but, you can have a good idea with:  
LISTF @DD.@.@,2
- Do not forget to purge the file ?????? as well as the one with ??????DD. Check the file code.
- Check for files that have not been accessed for a long time. LISTDIR5 is not practical for this, so, try:  
STORE @.@.@\$NULL;SHOW=OFFLINE;DATE/xx/xx
- Check for old databases that are not used (DBLIST in DATADICT)
- If you purge a database, do not forget to use the option KEEP=NO, and to purge the inverted files.

- With VERIFY, check you database for the status of your Master and Xref files. This will tell you if your Xref files are beginning to reach the limit:

DATA DICTIONARY VERSION G.00 WED, JUL 12, 1989, 2:13 PM  
TYPE 'HELP' FOR VALID COMMANDS  
PLEASE SELECT FUNCTION

verify sport

SORT ON 1(NAME), 2(TAG) OR 3(MNEMONIC) -

DATA MODEL NAME : MODEL

DATABASE NAME : SPORT

TYPE OF DATABASE : RD

FILE TYPE : MASTER

GROUP NAME : MINISIS

MASTER FILE NAME : MSPORT

XREF FILE NAME : XSPORT

MAXIMUM SIZE OF MASTER FILE : 698

MAXIMUM NUMBER OF ISNS : 1600

HIGHEST USED ISN : 1276

AUTO-NUMBERING : Y

NEXT ASSIGNED ISN : 1277

DEFAULT QUERY FIELD TAG : A004

DEFAULT PRINT FORMAT FILENAME : PSPORT

FIELD NAME : A000 - INFORMATION

MNEMONIC : INFO

.

.

FIELD NAME : COMMENTS

MNEMONIC : COMM

FIELD TAG : T109

MAXIMUM FIELD LENGTH : 50

PROMPT : Y

\*\*\* LIST OF INVERTED FILES \*\*\*

A004 REG

LNAM REG

CNTR REG

PLEASE SELECT FUNCTION -

- You can also do a LISTF of your Master and Xref files to see how large your files are:

LISTF MSPORT,1

FILENAME	CODE	SIZE	TYP	EOF	LIMIT
MSPORT	2110	4069B	FA	164	698

LISTF XSPORT,1

FILENAME	CODE	SIZE	TYP	EOF	LIMIT
XSPORT	2120	10B	FA	1600	1600

- If you run GARBAGE on those files, this will result in:

a) Your files being organized more efficiently.

b) Saving space by adjusting your files to your data.

GARBAGE COLLECTOR G.00.00 WE, JUL 12, 1989, 9:15 PM

ENTER DATA BASE NAME OR EXIT - **sport**

ENTER OPTION (STORE/RESTORE/REORG) - **reorg**

ENTER SIZE OF MASTER FILE - **175**

ENTER SIZE OF XREF FILE - **1400**

\*\*\* TOTAL RECORDS STORED = 1267

\*\*\* TOTAL DELETED RECORDS = 1

\*\*\* TOTAL RECORDS RESTORED = 1267

\*\*\* LONGEST RECORD LENGTH = 1406

\*\*\* SHORTEST RECORD LENGTH = 167

\*\*\* AVERAGE RECORD LENGTH = 525

\*\*\* MAXIMUM NUMBER OF FIELDS PER RECORD = 21

\*\*\* MINIMUM NUMBER OF FIELDS PER RECORD = 9

\*\*\* AVERAGE NUMBER OF FIELDS PER RECORD = 16

After running GARBAGE, the Master and Xref files will look like this:

FILENAME	CODE	LOGICAL RECORD			R/B
		SIZE	TYP	EOF LIMIT	
MSPORT	2110	4069B	FA	164 698	1
XSPORT	2120	10B	FA	1400 1400	128

- Check inverted files with TREEMANT to see the status of your files. Just answer 'N' to the "Recover Waste Space" prompt. Take a look, and compare "Total Directory Records" with "Total Used Directory Records". Also, compare the "Available Postings Records" with "Used Postings Records". You may want to make some adjustments as shown in example 2 below.

```
INVERT VERSION G.00.01 SUN, OCT 22, 1989, 3:59 PM
INVERT(.RESTARTI,CHECKPOINTI,LIMIT=),TREEMANT,LIST,
UNIVERT OR EXIT - treemant
ENTER KEY FILENAME (4 CHAR) - A004
RECOVER WASTE SPACE (Y[,OVERFLOWI,DELETE=YIN]/N/AUTO,n,m) - n

BTREE USAGE TYPE = BIT
MAXIMUM KEY LENGTH = 50
POTENTIAL NO. OF KEYS IN DIRECTORY = 1015
CURRENT NO. OF KEYS IN DIRECTORY = 134
TOTAL DIRECTORY RECORDS = 29
TOTAL USED DIRECTORY RECORDS = 6
AVAILABLE POSTINGS RECORDS = 96
USED POSTING RECORDS

INVERT(.RESTARTI,CHECKPOINTI,LIMIT=),TREEMANT,LIST,
UNIVERT OR EXIT - exil
```

### Example 1

```
INVERT VERSION G.00.01 SUN, OCT 22, 1989, 3:59 PM
INVERT(.RESTARTI,CHECKPOINTI,LIMIT=),TREEMANT,LIST,
UNIVERT OR EXIT - treemant
ENTER KEY FILENAME (4 CHAR) - A004
RECOVER WASTE SPACE (Y[,OVERFLOWI,DELETE=YIN]/N/AUTO,n,m) - y,delete=y
CHANGE SIZE OF B-TREE FILE (Y/N) - n

BTREE USAGE TYPE = BIT
MAXIMUM KEY LENGTH = 50
POTENTIAL NO. OF KEYS IN DIRECTORY = 1015
CURRENT NO. OF KEYS IN DIRECTORY = 134
TOTAL DIRECTORY RECORDS = 29
TOTAL USED DIRECTORY RECORDS = 6
AVAILABLE POSTINGS RECORDS = 96
USED POSTING RECORDS = 6

CHANGE SIZE OF DIRECTORY AREA (Y/N) -
NUMBER OF FREE DIRECTORY RECORDS AFTER REORG -
CHANGE SIZE OF POSTINGS AREA (Y/N) -
NUMBER OF FREE POSTINGS RECORDS AFTER REORG -
SORT STATISTICS:
NUMBER OF RECORDS = 108
NUMBER OF INTERMEDIATE PASSES = 0
SPACE AVAILABLE (IN WORDS) = 16958
NUMBER OF COMPARES = 799
NUMBER OF SCRATCHFILE IO'S = 52
CPU TIME (IN MINUTES) = .03

TOTAL USED POSTINGS AFTER REORG = 2
NUMBER OF KEYS DELETED = 26

INVERT(.RESTARTI,CHECKPOINTI,LIMIT=),TREEMANT,LIST,
UNIVERT OR EXIT - exil
```

### Example 2

#### Files on the HP3000

#### How are files created on the HP3000 ?

- default:
    - record size: depend on the input
    - block size : 1
    - format: Fixed for disc, Undefined elsewhere
    - carriage cntr: NOCCTL
    - flimit: 1023 records
    - device: DISC for disc files
    - nb extents: 8 ( 1 initial)
- all this can be controlled when you build a file using a file equation

REC=  
CCTL  
DISC

---

## Utilities

### Part of FOS (Fundamental Operation System)

#### SPOOK(5) — 5 refers to the MPE version

allows you to look at an output ready to be printed

- allows you to modify some characteristics of outputs in the spooler (priority, number of copies, ldev)
- you can copy the output onto a normal disc file
- you can store and restore output to/from tape

#### FREE5

- to display the map of free space on all your disc drives
- verify that you have enough space before offline inversion

#### VINIT

- to display a space map of one or all the disc drives
- to display/modify the defective tracks
- to condense space on a disc
- to initialize a private volume
- to format/initialize a disc or cartridge

#### EDITOR

- to edit ASCII text file

#### FCOPY

- to copy/compare files
- to dump a file in ASCII, HEX, OCTAL (ISOCONV)
- to convert a file from one format to the other:
- ASCII - EBCDIC, EBCDIC - ASCII be careful, check the conversion table (no binary)
- to modify the blocking factor of a file
- to selectively copy the file (SUBSET)

#### LISTDIR5

- to list the capabilities of users/accounts/groups
- to list the security of a user/account/file
- to list the physical address of a file
- to list the password, lockword and creator of a file

#### LISTLOG5

- to print a formatted output of the MPE logfiles of the system

#### LISTEQ5

- to list the file equations currently active on your session
- try to use the LISTEQ command
- use the LISTFTEMP command for temporary files

#### ASOCTABL5

- configure or list the association table of remote spool printer

#### DPAN5

- Dump ANalyzer to format a memory dump on the printer

**MEMLOGAN / MEMTIMER**

- allows you to check the memory log file
- allows you to change the interval of memory check

**SEGMENTER**

- allows you to create/modify SL files, and organize the segmentation of your programs

**KSAMUTIL**

- allows you to create/purge/verify/recover KSAM files
- useful after a crash to reset MINISIS KSAM files

**SORT/MERGE**

- allows you to sort/merge files

**DISKED5 \*\***

- allows you to peek and modify everywhere (SM require) on disk

**PATCH \*\***

- allows you to patch segments in an object program

**SLPATCH \*\***

- allows you to patch segments in an SL

**SADUTIL \*\***

- stand alone program that will allow you in a crash situation, to recover some of the files on disc, and send it to tape
- can also be used to reset the COLDLOAD ID

**RECOVER \*\***

- will read tape generated by SADUTIL, and restore files on the system

\*\* - program to be VERY CAREFUL !!!

**SUPPORT and TELESUP Accounts**

- These accounts are Hewlett-Packard accounts, and are used by your CE
- SUPPORT and TELESUP should always be updated since HP does support them
- If you don't have them on your system, ask your CE if he can install them
- Check the DOC group; all the documentation is there
- Group PRV contains programs that are running in privilege mode, so, be careful, read the instruction
- Some of the programs are also in the Contributed System Library of Interex ALTPROG - to modify an object program

BULDACCT - generates a file with account structure

CS80UTIL - stats on your CS80 drives

EPTFIND5 - list of entry points in a program

JANITOR - purges xxxxxxxx files

LOGxxx - utilities for system logfiles

MAXCAP - change maxdata/capability of program

MOVEFILE - move/copy set of files

SYSINFO - system configuration list

TAPEDIAG - tape utility

TAPESCAN - list of store tape

TDTCOPY - tape copy with 1 tape drive

TUNER - system tables usage display

VALIDATE - list/check of store tape

LISTFXX - list of file with date

SOO5 - display of system usage and process running

- Interex Contributed System Library
- Interex is the HP3000 international user group
- Programs have been given by members for 10 years
- Each member receives a tape with new programs at least once a year
- Most popular programs:
  - SLEEPER - job scheduling program
  - PSCREEN - prints screen on the line printer
  - MOO, SOOx - displays active process in the system
  - LOSTDISC - displays disc usage
  - BLOCK - blocking factor for file
- If you want to receive a tape, you must pay an annual membership fee for a site service which also includes the INTEREX magazine, a monthly newsletter, plus other privileges.
- INTEREX offers 4 different site services:

i) Site Service

ii) General Service

iii) Subscription-Only

iv) Personal Computer Service

- Other popular reading materials:
  - Super Group magazine
  - HP Chronicle

## Operations & Management

### Backup

- different types of backups

*backup of MPE with files: sysdump*

*backup of files only: store*

*these can be complete or selective*

- frequency of backup depends on how critical your application is and how much you can afford to loose
- safest method is to do a full backup every day
- other method is a full backup once a week and a partial backup for all other days
- where to keep backup tapes/cartridges
- one copy should be in another building
- tape/cartridge should be keep in conditioned environment

### Disaster Recovery Plan

- what is a "Disaster Recovery Plan"?
- does this plan apply to your site?
- considering other options

### System Startups

#### WARMSTART

- everything will be the same as before doing a shutdown of the system
- if system is shut every night, do a WARMSTART in the morning

#### COOLSTART

- system tables are reset

- jobs and output are eased
- system configuration and MPE version come from the disc

### **COLDSTART**

- system tables are reset
- jobs and output are eased
- system configuration and MPE come from tape
- MPE is copied to disc

### **RELOAD**

- everything on the system is eased
- the configuration/MPE/files are taken from tape

### **UPDATE**

- updates the MPE version on your system
- HP usually updates your system but you can do it yourself
- a SYSSTART file can make your life a lot easier when starting your system
- suggest you do a COLDSTART at least once every 1,000 sessions or once every 2 weeks
- keep your COLDLOAD tape nearby, and generate a new one each time you change your configuration

### **Spool**

- what is a spool ?
- two kinds: input and output
- mainly used on the printer
- device classes
- if not spooled, "hot"

- remote spool printer

### **Private Volume**

- not part of the system domain
- has his own directory
- can be removed anytime
- you can limit access to users
- OPERATOR/AUTOMATIC mount

### **System logging**

- is part of MPE
- you have control on this option
- what can be logged ?

TYPE	EVENT
0	LOG FILE ERRORS
1	LOG FILE HEADERS
2	JOB INITIATIONS
3	JOB TERMINATIONS
4	PROCESS COMPLETIONS
5	FILE CLOSURES
6	SYSTEM SHUT DOWNS
7	POWER FAILURES
8	SPOOLFILE FINISHED
9	LINE DISCONNECTS
10	LINE CLOSURES
11	I/O ERRORS
12	DISC LOAD
13	DISC MOUNT
14	TAPE MOUNT
15	CONSOLE LOG
16	PROGRAM EVENT

### **Recover lost disc space**

- what caused space to be lost (temporary files)
- try to do it from time to time
- recovery rate is 10 minutes/1000 files
- every 3 months minimum

### **Vinit**

- why condense ?



- do at least once a month

- free space table

- run PVINIT in batch

- every month

### Scheduling

- stream AT .....

- SLEEPER

- Jobs in the system: HPTREND, PREDICTA, etc.

### Terminal connection

- minimum is pin 2,3 and 7
- cable length can be more than 50 feet
- configuration of terminal
- terminal type and subtype

---

## Crash, Failure and Recovery

### Hardware Crash

- on which device ?
- if on CPU, tape drive, or any other hardware except a disc drive, there should be no problem in recovering the data
- on a private volume: this is a problem since it has its own directory
- on system disc: the chances of recovering the full system is very remote if it is a head crash, but recovery of specific files may be possible using SADUTIL. Normally, in this situation a RELOAD will have to be done.

- if you have a service contract, contact HP

- do you have a service contract ?

- what are your relations with HP ?

- If electricity is a problem, you may want to investigate purchasing a surge suppressor and voltage regulator

### Software Failure

- first, try to figure out what the message means (this is not always easy )

\*\*\*\* SYSTEM FAILURE #3

STATUS %100026

DELTA-P %003563

HALT 15

- copy the message in the system log book

- check HP's manual "MPE V System Operation and Resource Management" (Section 9); this section contains all system errors and what action you should take

- HP may recommend you do a memory dump on tape

- try a warmstart

- print or store your spoolfiles

- take note of all the jobs waiting

- purge spoolfiles and jobs waiting (otherwise space is eased)

- shut down the system

- do a COLDSTART with your tape

- recover your KSAM files with KSAMUTIL

- check all the last transactions that were entered or modified

- it is a good idea to keep the log book up to

date

---

## Special Cases

if you have a system failure when starting up the system (the 6 steps they tell you not to interrupt) if you try to restart the system, it may tell you that the COLDID is not OK; to recover, start the system with the DUS tape, and run SADUTIL; there is a new option that allows you to reset all the COLDIDs in the system

do a reload

if none of the recovery procedures work, call HP or the HP Response Center for help

---

## Performance

### What do we mean by performance?

- response time
- number of users
- how fast the CPU can go
- how many transactions/second
- etc.

### What can influence the performance of a computer?

- configuration
- workload

- type of processing

### What can we do?

- Identify the problem!
- CPU not powerful enough  
look at the activity light

too many users for the system's capacity

users are demanding too much

- disc I/O  
too much access at the same time

accesses are at the same place (same disc)

only a few files are accessed most of the time

- Try to solve it!

### What is using up the CPU?

- too many users at the same time on the system; set a limit to the number of users who can access the system simultaneously, or set up a schedule to access the computer

### Look at what they are doing!

- use the SHOWQ command  
maybe they are doing some free text search or generating big reports at your rush hour

are they aware of batch mode?

- Disc I/O  
look at the disc light!

if one disc is used more than the others, try to discover why

try to spread your files as much as possible

blocking factor can be a big influence on some files

use some reporting tools (REPORTIO, DISCIO, ...) to see what files are used the most

look at the number of extents on some files (mainly small ones)

---

## General

- UDCs can use a lot of resources, mainly when you logon and if you have several of them
- logging on and off the system puts some strain on it; explain to users that they should avoid doing this
- check the system tables regularly

## Suggestions

- check system priorities
- look at queuing (CS, DS, ES)
- can some processing be done during the night in batch?
- allocate frequently used programs in memory
- new AUTOALLOCATE feature (explanation of ALLOCATE)
- check system tables usage (TUNER)
- if you have some tools (OPT, SYSVIEW,...), check which users/programs are using the CPU the most, and try to optimize it.

---

## Configuration

### MINISIS Configuration

#### What is needed?

- Memory: 256 KB
- Minimum code segment size: 6144 KW
- Minimum extra data segment size: 6144 KW
- Maximum number of EDS/process: 7  
This is really for a minimum system

#### What can be configured in MINISIS?

- EDS for bitstring
- EDS for display
- EDS for expanded record in DS
- EDS for users and system  
these can be configured by changing line 831/834 in the message file

the file of the EDS must first be configured at the system level

```
831 16384\ <<EDS SIZE FOR BITSTRING - MAX. 32KW>>
832 16384\ <<EDS SIZE FOR STORING DISPLAY - MAX. 32KW>>
833 16384\ <<EDS SIZE FOR EXPANDED RECORD - MAX. 32KW>>
834 16384\ <<EDS SIZE FOR USER & SYSTEM EXTRA DATA SEGMENTS
```

## System configuration

#### How can we see the present configuration?

- Use the SYSINFO program and send the list to the printer
- Use the SYSDUMP \$NULL command  
Once we know what to change, there are

2 ways to change the configuration:

- do a COOLSTART/COLDSTART and change the parameters  
this will put the parameters into effect when the system starts, but they will have to be specified each time we restart the system
- do a SYSDUMP to tape, and COLDSTART the system from this tape; with this method, your changes will remain on tape and you won't have to specify your changes each time you restart the system  
do not use your normal tape; use a new one, in case you have to go back to the previous tape

Note: when the sysdump writes to the tape, your system will freeze, so choose your time accordingly to generate this tape.

#### SYSDUMP \*tape

```

ANY CHANGES? Y
SYSTEM ID = HP32033G.B2.02.?
MEMORY SIZE = 1024 (MIN=256, MAX=8192)?
I/O CONFIGURATION CHANGES?
SYSTEM TABLE CHANGES?
MISC CONFIGURATION CHANGES?
LOGGING CHANGES?
DISC ALLOCATION CHANGES?
SCHEDULING CHANGES?
SEGMENT LIMIT CHANGES? Y
MAX # OF CONCURRENT RUNNING PROGRAMS = 32 (MIN=1, MAX=511)?
MAX CODE SEGMENT SIZE = 16384 (MIN=1024, MAX=16384)?
MAX # OF SEGMENTS/PROCESS = 63 (MIN=1, MAX=255)?
MAX STACK SIZE = 31232 (MIN=256, MAX=31232)?
MAX EXTRA DATA SEGMENT SIZE = 32767 (MIN=0, MAX=32767)
MAX # OF EXTRA DATA SEGMENTS/PROCESS = 64 (MIN=0, MAX=255)?
STD STACK SIZE = 800 (MIN=256, MAX=4096)?
SYSTEM PROGRAM CHANGES?
SYSTEM SL CHANGES?
ENTER DUMP DATE?

```