

THE BEAD

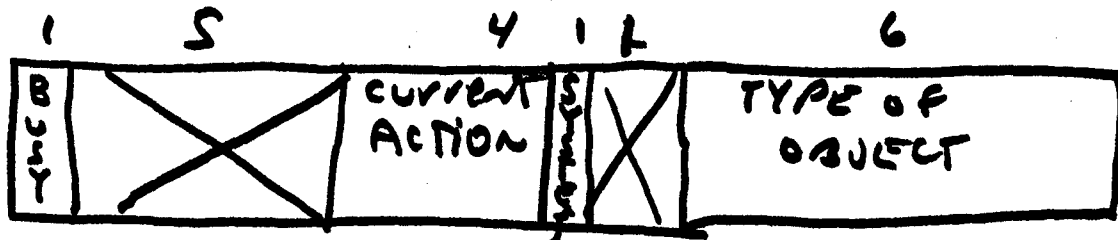
THE BEAD IS THE FIRST SUBPROCESS
CREATED IN EVERY PROCESS WHEN
THE SYSTEM IS INITIALIZED.
ITS FUNCTION IS TO ACT AS
AN INTERIM MONITOR PACKAGE
TO COORDINATE FILE ACTIVITY AND
NAMING, ELEMENTARY UTILITIES, AND BE A
COMMAND PROCESSOR FOR THE USER.

EVERY BEAD IS GIVEN A CLIST
WITH CAPABILITIES FOR ITS TELETYPE
AND FOR THE SYSTEM DIRECTORY.

THE SYSTEM DIRECTORY CONTAINS
NAMES AND TYPES OF OBJECTS IN
A STANDARD FILE AND A GIANT
CLIST WITH CAPABILITIES FOR
THESE OBJECTS. THE NAME
FILE HAS ENTRIES FORMATTED
LIKE THIS ○

1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10					
NAME OF OBJECT					TYPE/STATUS
NAME OF OWNER				OBJECT NUMBER	
SCOPE File Info	SCOPE File Info	CURRENT File POINTER			
	BLOCK SIZE	CURRENT LENGTH OF File. NEXT Block IS CREATED AT THIS ADDRESS			

TYPE/STATUS Fields



SYSTEMTEXT = set to 2 if SYSTEMTEXT File
CURRENT ACTION codes:

- 3 - WRITING } used only by SCOPE
- 4 - READING }
- 5 - REWOUND
- 6 - AT END of information

CALLS ON THE BEAD: ³ (save register first)

X1 - OBJECT NAME

X2 - USER NAME OR ZERO IF
CURRENT USER NAME IS REQUESTED

B1 - ADDRESS OF 4 WORD AREA
FOR ENTRY

B7 - LINK LIST INDEX FOR ENTRY
CAPABILITY

B6 - ACTION

ACTIONS

0 - LOCATE NAMED OBJECT, MAKE BUSY.
PUT ENTRY AT B1 AND
CAPABILITY AT B7. IF THE OBJECT IS
BUSY, GIVE BUSY NOTIFICATION.

1 - UPDATE OBJECT FROM
OBJECT NUMBER FIELD IN ENTRY
AT B1

2 - DELETE OBJECT FROM
DIRECTORY. OBJECT NUMBER?
FROM ENTRY AT B1

3 - CALL SUBPROCESS. GET
PESCRIPTOR FROM FILE NAME
AND USER NAME IN X1 AND X2

4
(back to previous page) STOP

PF, 'COPIES', 'CPILB',))

COMMANDS TO THE BEAD:

{^CCALL} file, user, Par 1, Par 2 Ⓢ

A subprocess descriptor is obtained from the NAMED file and a ~~sub~~ created. A call is then made to transfer control with the two parameters in X4 and X5 left justified

{^SSWATCH} display code.

{SWATCH} file, user Ⓢ

THE NAMED file is made NOT BUSY.

{^DDELETE} file, user Ⓢ

The named file is deleted

CONTINUE Ⓢ

ENTERED TO CONTINUE ANYWAY AFTER A BUSY NOTIFICATION IS MADE

TRY Ⓢ

ENTERED TO TRY AGAIN AND CHECK IF THE FILE IS STILL BUSY AFTER A BUSY NOTIFICATION IS MADE

RESTORE

-undoes STOP

SUBPROCESS DESCRIPTORS

THE FIRST WORDS OF A BINARY OUTPUT FILE ~~CONTAIN~~ FROM THE ASSEMBLER CONTAIN THE FOLLOWING INFORMATION :

ADDRESS IN ASSEMBLY LISTING

2	NAME OF CLASS CODE
3	" " " "
4	# OF MAP ENTRIES
5	SPACE FOR COMPILED MAP
6	FL FOR SUBPROC
7	ENTRY POINT FOR SUBPROC
8	SIZE OF CLIST
9	SIZE OF LOCAL SEARCH FILE
...	MAP SPECIFIERS
...	CLIST SPECIFIERS
...	0 0 0-0

CLIST SPECIFIERS CONTAIN THE 2 WORD NAMES OF OBJECTS. N APPEAR IN THE FIRST PART OF THE LOCAL CLIST.

MAP SPECIFIERS

6

2	File specifier - filename username
3	File address
4	cm address
5	Word count
6	Read only FLAG

IF THE FILE NAME IS ZERO,
THE LOCAL SCRATCH FILE ~~WILL~~ ^{WILL} BE
USED.

NOTE THAT THE ASSEMBLY ADDRESS
AND THE FILE ADDRESSES DIFFER
BY 17₁₀ BECAUSE OF THE 50
TABLE AND THE 77 TABLE AND
THE SCOPE LOGICAL RECORD WORD AT
THE BEGINNING OF THE FILE.

NAMES of SPECIAL OBJECTS IN THE DIRECTORY:

SYSTEM OPERATIONS HAVE USER
NAMES of 'OPERATE'. THE LIST
includes:

- READ
- WRITE
- SENDE (SENDE)
- HANG
- GETE
- CCLIST - CREATE C LIST
- CFILE - CREATE FILE
- CBLK
- CPROC
- CEUCH
- CSPROC
- CCC - CREATE CLASS CODE
- SAVE - SAVE REGISTERS
- RESTOR
- DSPCAP - DISPLAY CAPABILITY
- DSPARB - DISPLAY ANY CAPABILITY
- MVECAP - MOVE CAP IN FULL C LIST
- CAP IN - MOVE CAP INTO FULL C LIST
- CAP OUT - MOVE CAP OUT OF FULL C LIST
- RSHAPE - READ FILE SHAPE
- COPER - CREATE OPERATION
- MBLOCK - MOVE BLOCK

PROBE
DBLK

- CHECK BLOCK
- DESTROY BLOCK

CONDITIONS AT INITIAL ENTRY TO
A called SUB PROCESS :

C-LIST :

- 0 ALLOCATION BLOCK
- 1 TTY CAP 2 (TTY File)
- 2 TTY CAP 2 (CP to PP event channel)
- 3 TTY CAP 3 (PP to CP event channel)
- 4 CALL TO BEAD ←
- 5 CALL TO SELF ←
- 6 CAP OF SELF ← class code
- 7 CAP OF THIS C-LIST

- 1 E-BEAD
- 3 read
- 4 write
- 5 send
- 6 hang