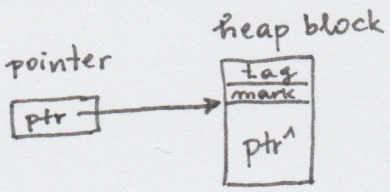
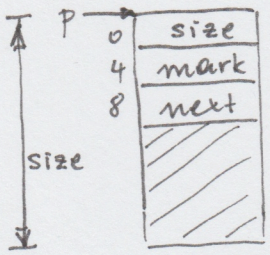
HEAP BLOCKS IN THE EXTENDED OBERON SYSTEM (RECORD BLOCKS AND ARRAY BLOCKS)



blktyp := tag MOD 4

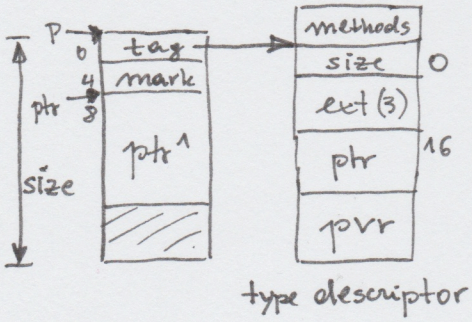
tag field		blktyp	heap blk type
>0 | 00	any	0	Record
>0 | 01	any	1	Array of record
0 | 10	2	2	Array of pointer
0 | 11	3	3	Array of basic type
0 | 111	7	3	Array of procedure

Free heap block (mark < 0)



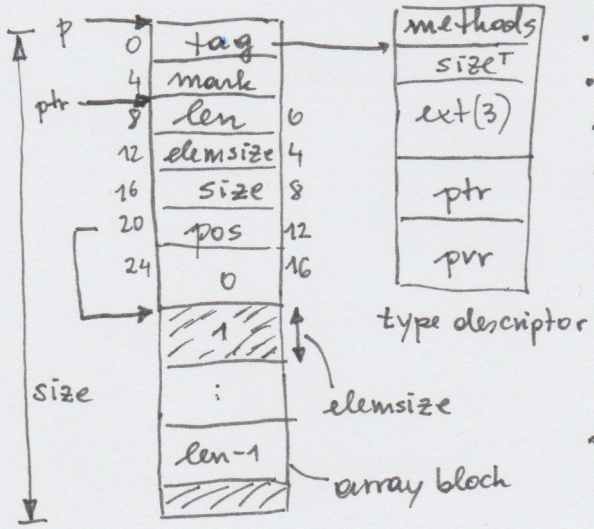
- mark = -1
- next points to next free heap block of this size (32, 64, 128, n * 256)
- free blocks are typed (i.e. have fields)

Record (blktyp = 0, tag = any)



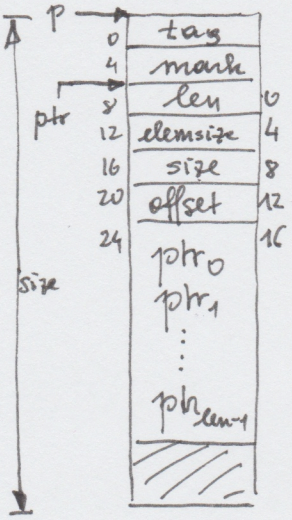
- mark >= 0
- tag = any
- blktyp = 0
- size stored in type descriptor

Array of record (blktyp = 1, tag = any)



- mark >= 0
- tag = any
- blktyp = 1
- len = # of array elems
- size stored in array block (size in type desc ignored)
- pos = current element during mark phase

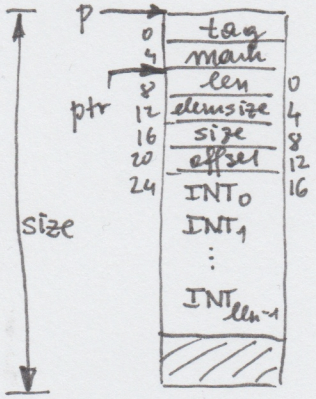
Array of pointer (blktyp = 2, tag = 2)



- mark >= 0
- tag = 2
- blktyp = 2
- len = # of pointers
- offset = current pointer during mark phase
- no type descriptor

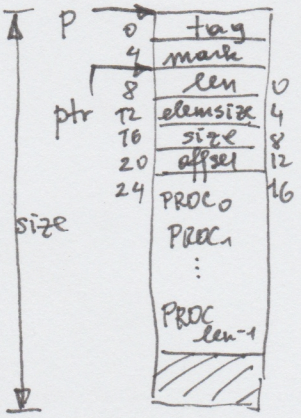
- elemsize = 4

Array of basic type (blktyp = 3, tag = 3)



- mark >= 0
- tag = 3
- blktyp = 3
- len = # of array elems
- elemsize = 1, 2 or 4
- offset = -1
- no type descriptor
- ≙ "sysblk" in Ceres-Oberon

Array of procedure (blktyp = 3, tag = 7)



- mark >= 0
- tag = 7
- blktyp = 3
- len = # of procedures
- elemsize = 4
- offset = -1
- Traversed during reference checking
- No type descriptor