


```
IIIIII  NN  NN  IIIII  DDDDDDD  EEEEEEEEE  FFFFFFFF
IIIIII  NN  NN  IIIII  DDDDDDD  EEEEEEEEE  FFFFFFFF
  II    NN  NN  II      DD   DD  EE        FF
  II    NN  NN  II      DD   DD  EE        FF
  II    NNNN NN  II      DD   DD  EE        FF
  II    NNNN NN  II      DD   DD  EE        FF
  II    NN  NN NN  II      DD   DD  EEEEEEE   FFFFFFFF
  II    NN  NN NN  II      DD   DD  EEEEEEE   FFFFFFFF
  II    NN  NNNN NN  II      DD   DD  EE        FF
  II    NN  NNNN NN  II      DD   DD  EE        FF
  II    NN  NN    NN  II      DD   DD  EE        FF
  II    NN  NN    NN  II      DD   DD  EE        FF
  II    NN  NN    NN  II      DD   DD  EE        FF
  II    NN  NN    NN  IIIII  DDDDDDD  EEEEEEEEE  FF
  IIIII  NN  NN    NN  IIIII  DDDDDDD  EEEEEEEEE  FF
```

```
....
....
....
....
```

```
BBBBBBBB  333333  222222
BBBBBBBB  333333  222222
BB         BB  33   33  22   22
BB         BB  33   33  22   22
BB         BB  33   33  22   22
BB         BB  33   33  22   22
BBBBBBBB  33   33  22   22
BBBBBBBB  33   33  22   22
BB         BB  33   33  22   22
BB         BB  33   33  22   22
BB         BB  33   33  22   22
BB         BB  33   33  22   22
BBBBBBBB  333333  2222222222
BBBBBBBB  333333  2222222222
```


Require file for INIT utility

Version: 'V04-000'

```

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```

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FACILITY: INIT Utility Structure Level 1

ABSTRACT:

This file contains definitions common to the modules that make up the INIT utility.

ENVIRONMENT:

STARLET operating system, including privileged system services and internal exec routines.

--

AUTHOR: Andrew C. Goldstein, CREATION DATE: 9-Nov-1977 11:36

MODIFIED BY:

- V03-002 STJ3088 Steven T. Jeffreys 24-Apr-1983
Add support for /[NO]ERASE and /[NO]HIGHWATER.
- V03-001 MMD0118 Meg Dumont, 29-Mar-1983 0:43
Add support for new opt's fo AVR, AVL and VMS protections
- V02-009 DMW0014 David Michael Walp 26-Aug-1981

Changed /ANSI to /LABEL

V02-008 ACG0210 Andrew C. Goldstein, 1-Jul-1981 19:32
Allow INIT/STRUCTURE=1 on magtape (for MCR CLI)

V02-007 DMW0002 David Michael Walp 3-Mar-1981
Added switch '/ANSI=VOLUME_ACCESSIBILITY:"x"' for ANSI
magnetic tape volume label (VOL1)

V02-006 RLRDENS Robert L. Rappaport 6-Oct-1980
Added /DENSITY=SINGLE and /DENSITY=DOUBLE support for RX02's

Previous revision history moved to [INIT.SRC]INIT.REV

**

Definitions of the option bits produced by the command parser.

LITERAL
SEQULST

(OPT_GBL,0,1	! /DENSITY switch seen
.(DENSITY,)	! /DENSITY:800 switch seen
.(DENS_800,)	! /SHARE switch seen
.(SHARE,)	! /GROUP switch seen
.(GROUP,)	! /SYSTEM switch seen
.(SYSTEM,)	! /EBCDIC switch seen
.(EBCDIC,)	! /VERIFIED switch seen
.(VERIFIED,)	! /DATACHECK:READ switch seen
.(READCHECK,)	! /DATACHECK:WRITE switch seen
.(WRITECHECK,)	! /BADBLOCKS switch seen
.(BADBLOCKS,)	! /PROTECTION switch seen
.(PROTECTION,)	! /FILE PROTECTION switch seen
.(FILE_PROT,)	! /RECORD PROTECTION switch seen
.(RECORD_PROT,)	! /OWNER DIC switch seen
.(OWNER_DIC,)	! /MAXIMUM switch seen
.(MAXIMUM,)	! /CLUSTER switch seen
.(CLUSTER,)	! /HEADERS switch seen
.(HEADERS,)	! /EXTENSION switch seen
.(EXTENSION,)	! /WINDOW switch seen
.(WINDOW,)	! /ACCESSED switch seen
.(ACCESSED,)	! /INDEX:BEGINNING switch seen
.(INDEX_BEG,)	! /INDEX:MIDDLE switch seen
.(INDEX_MID,)	! /INDEX:END switch seen
.(INDEX_END,)	! /INDEX:n switch seen
.(INDEX_LBN,)	device name seen
.(DEVICE,)	volume label seen
.(LABEL,)	volume is already Files-11
.(IS_FILES11,)	! /OVERRIDE:EXPIRATION
.(OVR_EXP,)	! /USER NAME switch seen
.(USER_NAME,)	! /DIRECTORIES switch seen
.(DIRECTORIES,)	! /OVERRIDE:ACCESSIBILITY
.(OVR_ACC,)	! /STRUCTURE:1 switch seen
.(STRUCTURE1,)	switches which are defaulted true that are illegal for MT were explicitly seen
.(EXPNOTMT,)	! /DENSITY:1600 switch seen
.(DENS_1600,)	explicit /VERIFIED or /NOVERIFIED seen
.(EXP_VER,)	


```

.(DENS_6250,)      ! /DENSITY:6250 switch seen
.(DENS_SING,)     ! /DENSITY:SINGLE switch seen
.(DENS_DOUB,)    ! /DENSITY:DOUBLE switch seen
.(LABEL_QUAL,)  ! /LABEL=VOLUME_ACCESSIBILITY:'x'
.(VOL_OWNER,)   ! /LABEL=OWNER IDENTIFIER:'volume owner' seen
.(OVR_VOLO,)    ! /OVERRIDE=OWNER IDENTIFIER seen
.(INTERCHG,)    ! /INTERCHANGE seen
.(ERASE,)       ! /ERASE seen
.(NOHIGHWATER,) ! /NOHIGHWATER seen
);

```

Masks of options legal for disk and tape.

LITERAL

```

DISK OPTIONS =      ! qualifiers legal for disk
1^OPT_DENSITY      ! /DENSITY switch seen
OR 1^OPT_SHARE     ! /SHARE switch seen
OR 1^OPT_GROUP     ! /GROUP switch seen
OR 1^OPT_SYSTEM    ! /SYSTEM switch seen
OR 1^OPT_VERIFIED  ! /VERIFIED switch seen
OR 1^OPT_READCHECK ! /DATACHECK:READ switch seen
OR 1^OPT_WRITECHECK ! /DATACHECK:WRITE switch seen
OR 1^OPT_BADBLOCKS ! /BADBLOCKS switch seen
OR 1^OPT_PROTECTION ! /PROTECTION switch seen
OR 1^OPT_FILE_PROT ! /FILE PROTECTION switch seen
OR 1^OPT_RECORD_PROT ! /RECORD PROTECTION switch seen
OR 1^OPT_OWNER_OIC ! /OWNER OIC switch seen
OR 1^OPT_MAXIMOM   ! /MAXIMOM switch seen
OR 1^OPT_CLUSTER   ! /CLUSTER switch seen
OR 1^OPT_HEADERS   ! /HEADERS switch seen
OR 1^OPT_EXTENSION ! /EXTENSION switch seen
OR 1^OPT_WINDOW    ! /WINDOW switch seen
OR 1^OPT_ACCESSED  ! /ACCESSED switch seen
OR 1^OPT_INDEX_BEG ! /INDEX:BEGINNING switch seen
OR 1^OPT_INDEX_MID ! /INDEX:MIDDLE switch seen
OR 1^OPT_INDEX_END ! /INDEX:END switch seen
OR 1^OPT_INDEX_LBN ! /INDEX:n switch seen
OR 1^OPT_DEVICE    ! device name seen
OR 1^OPT_LABEL     ! volume label seen
OR 1^OPT_IS_FILES11 ! volume is already Files-11
OR 1^OPT_USER_NAME ! /USER_NAME switch seen
OR 1^OPT_DIRECTORIES ! /DIRECTORIES switch seen
OR 1^OPT_STRUCTURE1 ! /STRUCTURE:1 switch seen

DISK OPTIONS2=
1^(OPT_EXPNOTMT -32) ! illegal MT switches explicitly seen
OR 1^(OPT_EXP_VER -32) ! explicit /VERIFIED or /NOVERIFIED seen
OR 1^(OPT_DENS_SING-32) ! /DENSITY:SINGLE switch seen
OR 1^(OPT_DENS_DOUB-32) ! /DENSITY:DOUBLE switch seen
OR 1^(OPT_ERASE-32) ! /ERASE seen
OR 1^(OPT_NOHIGHWATER-32) ! /NOHIGHWATER

TAPE OPTIONS =      ! qualifiers legal for tape
1^OPT_DENSITY      ! /DENSITY switch seen
OR 1^OPT_DENS_800  ! /DENSITY:800 switch seen

```

```

OR 1^OPT_EBCDIC           : /EBCDIC switch seen
OR 1^OPT_SHARE           : SET BECAUSE OF DISK DEFAULT TRUE
OR 1^OPT_VERIFIED        : SET BECAUSE OF DISK DEFAULT TRUE
OR 1^OPT_PROTECTION      : /PROTECTION switch seen
OR 1^OPT_OWNER_UIC       : /OWNER UIC switch seen
OR 1^OPT_OVR_EXP         : OVERRIDE EXPIRATION DATE SEEN
OR 1^OPT_OVR_ACC         : /OVERRIDE:ACCESSIBILITY
OR 1^OPT_STRUCTURE1     : /STRUCTURE:1 switch seen
OR 1^OPT_DEVICE          : device name seen
OR 1^OPT_LABEL           : volume label seen
OR 1^OPT_IS_FILES11,    : volume is already Files-11

TAPE_OPTIONS2 =
1^(OPT_DENS 1600 - 32)   : /DENSITY:1600 switch seen
OR 1^(OPT_DENS 6250-32) : /DENSITY:6250 switch seen
OR 1^(OPT_LABEL_QUAL-32) : /LABEL=VOLUME ACCESSIBILITY:'x' switch seen
OR 1^(OPT_VOL_OWNER-32) : /LABEL=OWNER IDENTIFIER:'volume owner' seen
OR 1^(OPT_OVR_VOLO-32)  : /OVERRIDE=OWNER IDENTIFIER seen
OR 1^(OPT_INTERCHG-32)  : /INTERCHANGE seen
OR 1^(OPT_ERASE-32),    : /ERASE seen

LEVEL2_OPTIONS =        : options legal only on structure level 2
1^OPT_READCHECK         : /DATACHECK:READ switch seen
OR 1^OPT_WRITECHECK     : /DATACHECK:WRITE switch seen
OR 1^OPT_RECORD_PROT    : /RECORD PROTECTION switch seen
OR 1^OPT_CLUSTER,      : /CLUSTER switch seen

LEVEL2_OPTIONS2 =       : second longword of above
1^(OPT_ERASE-32)        : /ERASE seen
OR 1^(OPT_NOHIGHWATER-32) : /NOHIGHWATER

```

```

: Error exit macro.

```

```

MACRO

```

```

ERR_EXIT (CODE) =
    SIGNAL_STOP (%IF NOT %NULL (CODE) %THEN CODE %ELSE 0 %FI)
%,
ERR_MESSAGE [] =
    SIGNAL (%REMAINING)
%;

```

```

: Macro used to signal fatal errors (internal consistency checks).

```

```

MACRO

```

```

BUG_CHECK (CODE, TYPE, MESSAGE) =
    BEGIN
    BUILTIN BUGW:
    EXTERNAL LITERAL %NAME('BUGS_', CODE);
    BUGW (%NAME('BUGS_', CODE) OR 4)
    END
%;

```

```

: Macro to generate a string and descriptor.

```


MACRO

```
DESCRIPTOR (STRING) =
  UPLIT (%CHARCOUNT (STRING), UPLIT BYTE (STRING))%;
```

```
!
! MACRO TO CALL THE CHANGE MODE TO KERNEL SYSTEM SERVICE.
! MACRO CALL FORMAT IF 'KERNEL_CALL(Routine, ARG1, ARG2, ...)'.
```

MACRO

```
KERNEL_CALL(R) =
  BEGIN
  EXTERNAL ROUTINE SYSSCMKRNL : ADDRESSING_MODE(Absolute);
  BUILTIN SP;
  SYSSCMKRNL (R, .SP, %LENGTH -1
             %IF %LENGTH GTR 1 %THEN, %REMAINING %FI)
  END%;
```

```
!
! MACRO TO CALL THE CHANGE MODE TO EXEC SYSTEM SERVICE.
! MACRO CALL FORMAT IF 'EXEC_CALL(Routine, ARG1, ARG2, ...)'.
```

MACRO

```
EXEC_CALL(R) =
  BEGIN
  EXTERNAL ROUTINE SYSSCMEXEC : ADDRESSING_MODE(Absolute);
  BUILTIN SP;
  SYSSCMEXEC (R, .SP, %LENGTH -1
             %IF %LENGTH GTR 1 %THEN, %REMAINING %FI)
  END%;
```

```
!
! Macro to declare parameter list for TPARSE action routines.
```

MACRO

```
TPARSE_ARGS (NAME) =
  BUILTIN AP;
  BIND NAME = AP : REF BBLOCK;
  %;
```

```
!
! Structure of bad block table entry.
```

MACRO

```
BAD_LBN          = 0, 0, 32, 0%, ! bad block start LBN
BAD_SECTOR       = 0, 0, 8, 0%,  ! bad block sector number
BAD_TRACK        = 1, 0, 8, 0%,  ! bad block track number
BAD_CYLINDER     = 2, 0, 16, 0%, ! bad block cylinder number
BAD_COUNT        = 4, 0, 16, 0%, ! number of blocks in bad section
BAD_STC_FORM     = 6, 0, 1, 0%,  ! set if sector, track, cylinder format
```

LITERAL

```
BAD_LENGTH      = 8;           ! length of bad block table entry
```

```
!
! Structure for all MDL defined blocks.
```

STRUCTURE

```
BBLOCK [O, P, S, E; N] =
  [N]
  (BBLOCK+O)<P,S,E>.
```

```
BBLOCKVECTOR [I, O, P, S, E; N, BS] =  
              [N*BS]  
              ((BBLOCKVECTOR+I*BS)+O)<P,S,E>;
```

! Cleanup action flags.

```
LITERAL CLF_CLEARVALID = 1;           ! clear software volume valid on error
```



