

NNN		NNN	MMM		MMM	LLL
NNN		NNN	MMM		MMM	LLL
NNN		NNN	MMM		MMM	LLL
NNN		NNN	MMMMMM	MMMMMM		LLL
NNN		NNN	MMMMMM	MMMMMM		LLL
NNN		NNN	MMMMMM	MMMMMM		LLL
NNNNNN		NNN	MMM	MMM	MMM	LLL
NNNNNN		NNN	MMM	MMM	MMM	LLL
NNNNNN		NNN	MMM	MMM	MMM	LLL
NNN	NNN	NNN	MMM		MMM	LLL
NNN	NNN	NNN	MMM		MMM	LLL
NNN	NNN	NNN	MMM		MMM	LLL
NNN		NNNNNN	MMM		MMM	LLL
NNN		NNNNNN	MMM		MMM	LLL
NNN		NNNNNN	MMM		MMM	LLL
NNN		NNN	MMM		MMM	LLL
NNN		NNN	MMM		MMM	LLL
NNN		NNN	MMM		MMM	LLL
NNN		NNN	MMM		MMM	LLLLLLLLLLLLLLLL
NNN		NNN	MMM		MMM	LLLLLLLLLLLLLLLL
NNN		NNN	MMM		MMM	LLLLLLLLLLLLLLLL

_S

Ps

--

NP

NP

SG

SOI

NP

PA

-L

```

NN      NN  MM      MM  LL      LL      IIIIII  BBBB8888
NN      NN  MM      MM  LL      LL      IIIIII  88888888
NN      NN  MMMM    MMMM LL      LL      II      88      88
NN      NN  MMMM    MMMM LL      LL      II      88      88
NNNN    NN  MM      MM  LL      LL      II      88      88
NNNN    NN  MM      MM  LL      LL      II      88      88
NN  NN  NN  MM      MM  LL      LL      II      88888888
NN  NN  NN  MM      MM  LL      LL      II      88888888
NN      NNNN MM      MM  LL      LL      II      88      88
NN      NN  MM      MM  LL      LL      II      88      88
NN      NN  MM      MM  LL      LL      II      88      88
NN      NN  MM      MM  LLLLLLLLLL LLLLLLLLLL IIIIII  88888888
NN      NN  MM      MM  LLLLLLLLLL LLLLLLLLLL IIIIII  88888888

```

```

LL      IIIIII  SSSSSSSS
LL      IIIIII  SSSSSSSS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SSSSSS
LL      II      SSSSSS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SS
LLLLLLLLLLL IIIIII  SSSSSSSS
LLLLLLLLLLL IIIIII  SSSSSSSS

```

0001 0
0002 0
0003 0
0004 0
0005 0
0006 0
0007 0
0008 0
0009 0
0010 0
0011 0
0012 0
0013 0
0014 0
0015 0
0016 0
0017 0
0018 0
0019 0
0020 0
0021 0
0022 0
0023 0
0024 0
0025 0
0026 0
0027 0
0028 0
0029 0
0030 0
0031 0
0032 0
0033 0
0034 0
0035 0
0036 0
0037 0
0038 0
0039 0
0040 0
0041 0
0042 0
0043 0
0044 0
0045 0
0046 0
0047 0
0048 0
0049 0
0050 0
0051 0
0052 0
0053 0
0054 0
0055 0
0056 0
0057 0

```
Version: 'V04-000'

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*****

++
NMAHEAD.B32
    Define $EQLST macro to make library from the NMALIBRY.B32 file
    This source is taken from the following source:
--
++
UTLDEF.B32 - UTILITY DEFINITION MACROS FOR BLISS PROCESSING
OF STARLET DEFINITION MACROS.
--

MACRO TO GENERATE EQLST CONSTRUCTS.
MACRO
    $EQLST(P,G,I,S)[A]=
        %NAME(P,GET1ST_A) =
            %IF NUL2ND_A
            %THEN (I) % %COUNT*(S) ! ASSUMES I, S ALWAYS GENERATED BY CONVERSION PROGRAM
            %ELSE GET2ND_A
            %FI %,
    GET1ST_(A,B)=
        A-%,
    GET2ND_(A,B)=
        B-%, ! KNOWN NON-NULL
```

I 16
15-Sep-1984 23:07:07
15-Sep-1984 22:48:15

VAX-11 Bliss-32 V4.0-742
_S255SDUA28:[NML.SRC]NMAHEAD.B32;1

: M 0058 0
: 0059 0
: 0060 0
: 0061 0
: 0062 0
: 0063 0

NUL2ND (A,B)=
%NULL(B) %;

End of NMAHEAD

! ! !

0064 0
0065 0
0066 0
0067 0
0068 0
0069 0
0070 0
0071 0
0072 0
0073 0
0074 0
0075 0
0076 0
0077 0
0078 0
0079 0
0080 0
0081 0
0082 0
0083 0
0084 0
0085 0
0086 0
0087 0
0088 0
0089 0
0090 0
0091 0
0092 0
0093 0
0094 0
0095 0
0096 0
0097 0
0098 0
0099 0
0100 0
0101 0
0102 0
0103 0
0104 0
0105 0
0106 0
0107 0
0108 0
0109 0
0110 0
0111 0
0112 0
0113 0
0114 0
0115 0
0116 0
0117 0
0118 0
0119 0
0120 0

NMLDEF.MDL - internal definitions for NML

Version 'V04-000'

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

++

FACILITY: VAX/VMS DECnet Network Management Listener

ABSTRACT:

This file contains various MDL definitions for NML.

ENVIRONMENT:

n/a

AUTHOR: Scott Davidson CREATION DATE: 1-Aug-1979

MODIFICATION HISTORY:

V03-011	MKP0016	Kathy Perko	25-Mar-1984
		Add node parameter parsing constants.	
V03-010	MKP0015	Kathy Perko	6-Jan-1984
		Add X25 Access Module entity.	
V03-009	MKP0014	Kathy Perko	7-July-1983
		Add definitions for ISAM node permanent database with four ISAM keys.	
V03-008	MKP0013	Kathy Perko	8-May-1983
		Coordinate NMLSLOG bits in NML and MOM.	
V03-007	MKP0012	Kathy Perko	24-April-1983

0121 0
0122 0
0123 0
0124 0
0125 0
0126 0
0127 0
0128 0
0129 0
0130 0
0131 0
0132 0
0133 0
0134 0
0135 0
0136 0
0137 0
0138 0
0139 0
0140 0
0141 0
0142 0
0143 0
0144 0
0145 0
0146 0
0147 0
0148 0
0149 0
0150 0
0151 0
0152 0
0153 0
0154 0
0155 0
0156 0
0157 0
0158 0
0159 0
0160 0
0161 0
0162 0
0163 0
0164 0
0165 0

- Delete service functions from NML. Also, add support for circuit service substate and service physical address.
- V03-006 MKP0011 Kathy Perko 17-Jan-1983
Support for NI Configurator Module.
- V03-005 MKP0010 Kathy Perko 18-Nov-1982
Add module as a source for logging events.
Add Phase IV.
- V03-004 MKP0009 Kathy Perko 27-Sept-1982
Add Area and Adjacency entities.
- V03-003 MKP0008 Kathy Perko 21-Sept-1982
Add dispatch table definitions for ZERO.
- V03-002 MKP0007 Kathy Perko 22-June-1982
Set up "active network" for X-25 Protocol networks and enhance Entity Table (in NMLDAT) to include ACTIVE and KNOWN search key IDs, lengths, values, and operators.
Add X29-Server entity.
- V03-001 MKP0006 Kathy Perko 17-Mar-1982
Add NML entity codes and permanent database keys for X-25 Access and Server Modules.
- V02-006 MKP0005 Kathy Perko 20-Nov-1981
Add parameter grouping flags for X.25 Protocol DTEs, Groups, and Networks.
- V02-005 MKP0004 Kathy Perko 17-Nov-1981
Add circuits to event source block definitions.
- V02-004 MKP0003 Kathy Perko 3-Nov-1981
Add field to MSB for second line of message text for RMS signalled messages.
- V02-003 MKP0002 Kathy Perko 14-Oct-1981
Add flags for parsing V2 to V3 SET LINE conversions.
- V02-002 MKP0001 Kathy Perko 18-Sept-1981
Change network management version number to 3.0.0

0166 0
0167 0
0168 0
0169 0
0170 0
0171 0
0172 0
0173 0
0174 0
0175 0
0176 0
0177 0
0178 0
0179 0
0180 0
0181 0
0182 0
0183 0
0184 0
0185 0
0186 0
0187 0
0188 0
0189 0
0190 0
0191 0
0192 0
0193 0
0194 0
0195 0
0196 0
0197 0
0198 0
0199 0
0200 0
0201 0
0202 0
0203 0
0204 0
0205 0
0206 0
0207 0
0208 0
0209 0
0210 0
0211 0
0212 0
0213 0
0214 0
0215 0
0216 0
0217 0
0218 0
0219 0
0220 0
0221 0
0222 0

```
! Symbol definitions for the Network Management Listener
!...$NMLDEF
! Message parsing flag bit definitions (set in NML$GL_PRS_FLGS)
!
! Common parsing flags.
MACRO      NML$V_PRS_VMS      = 0,0,1,0%;           ! VMS specific function
LITERAL    NML$M_PRS_VMS      = 1^1 - 1^0;
MACRO      NML$V_PRS_ALL      = 0,1,1,0%;           ! Set/clear all parameters
LITERAL    NML$M_PRS_ALL      = 1^2 - 1^1;
MACRO      NML$V_PRS_QUALIFIER = 0,2,1,0%;           ! NICE command includes a qualifier
LITERAL    NML$M_PRS_QUALIFIER = 1^3 - 1^2;
MACRO      NML$V_PRS_ENTITY_FOUND = 0,3,1,0%;       ! On multiple entity operations, at least one
LITERAL    NML$M_PRS_ENTITY_FOUND = 1^4 - 1^3;
! entity has been set, shown, etc.
!
! Specific entity parsing flags.
!
! Node parsing flags.
MACRO      NML$V_PRS_EXEPG     = 0,8,1,0%;           ! Executor-only parameter group
LITERAL    NML$M_PRS_EXEPG     = 1^9 - 1^8;
MACRO      NML$V_PRS_NODPG     = 0,9,1,0%;           ! Executor/node parameter group
LITERAL    NML$M_PRS_NODPG     = 1^10 - 1^9;
MACRO      NML$V_PRS_REMPG     = 0,10,1,0%;          ! Remote node parameter group
LITERAL    NML$M_PRS_REMPG     = 1^11 - 1^10;
MACRO      NML$V_PRS_LOOPG     = 0,11,1,0%;         ! Loop node parameter group
LITERAL    NML$M_PRS_LOOPG     = 1^12 - 1^11;
!
! Logging parsing flags.
MACRO      NML$V_PRS_EXESNK    = 0,8,1,0%;           ! Sink node is executor
LITERAL    NML$M_PRS_EXESNK    = 1^9 - 1^8;
MACRO      NML$V_PRS_SKNKOD    = 0,9,1,0%;           ! Sink node specified
LITERAL    NML$M_PRS_SKNKOD    = 1^10 - 1^9;
MACRO      NML$V_PRS_KNOSNK    = 0,10,1,0%;         ! Known sink nodes
LITERAL    NML$M_PRS_KNOSNK    = 1^11 - 1^10;
MACRO      NML$V_PRS_EFIPG     = 0,11,1,0%;         ! Event filter parameter group
LITERAL    NML$M_PRS_EFIPG     = 1^12 - 1^11;
MACRO      NML$V_PRS_ESIPG     = 0,12,1,0%;         ! Event sink parameter group
LITERAL    NML$M_PRS_ESIPG     = 1^13 - 1^12;
```

```
0223 0 MACRO NML$V_PRS_EVE = 0,13,1,0%; ! Event parameter processed
0224 0 LITERAL NML$M_PRS_EVE = 1^14 - 1^13;
0225 0
0226 0
0227 0 | Line parsing flags.
0228 0
0229 0
0230 0
0231 0 MACRO NML$V_PRS_LINE = 0,8,6,0%; ! Line flags (LINS definitions)
0232 0 LITERAL NML$M_PRS_LINE = 1^14 - 1^8;
0233 0 MACRO NML$V_PRS_V2_LINE = 0,14,1,0%; ! Command parameters are for a line.
0234 0 LITERAL NML$M_PRS_V2_LINE = 1^15 - 1^14;
0235 0 MACRO NML$V_PRS_V2_CIRCUIT = 0,15,1,0%; ! Command parameters are for a circuit.
0236 0 LITERAL NML$M_PRS_V2_CIRCUIT = 1^16 - 1^15;
0237 0 MACRO NML$V_PRS_V2_STA = 0,16,1,0%; ! Command contains a state change.
0238 0 LITERAL NML$M_PRS_V2_STA = 1^17 - 1^16;
0239 0
0240 0
0241 0 | NICE message parsing constants
0242 0
0243 0 LITERAL
0244 0 $EQU_LST (NML$C_GBL, 0, 1
0245 0 , (NODE_NUM_PARAM, 0) ! Parameter is always a node number
0246 0 , (NODE_ID_PARAM, 1) ! Parameter can be a node number or name
0247 0 );
0248 0
0249 0 | Protocol DTE parsing flags.
0250 0
0251 0
0252 0
0253 0 MACRO NML$V_PRS_CHANNELS = 0,8,1,0%; ! Processing SET channels - first channel
0254 0 LITERAL NML$M_PRS_CHANNELS = 1^9 - 1^8;
0255 0 !
0256 0 pair already encountered.
```


0257 0
0258 0
0259 0
0260 0
0261 0
0262 0
0263 0
P 0264 0
P 0265 0
P 0266 0
0267 0
0268 0
0269 0
0270 0
0271 0
P 0272 0
P 0273 0
P 0274 0
P 0275 0
P 0276 0
P 0277 0
P 0278 0
P 0279 0
P 0280 0
P 0281 0
P 0282 0
P 0283 0
P 0284 0
P 0285 0
P 0286 0
P 0287 0
P 0288 0
P 0289 0
P 0290 0
P 0291 0
P 0292 0
P 0293 0
P 0294 0
P 0295 0
P 0296 0
P 0297 0
P 0298 0
P 0299 0
P 0300 0
P 0301 0
0302 0
0303 0
0304 0
0305 0
0306 0
P 0307 0
P 0308 0
P 0309 0
P 0310 0
P 0311 0
P 0312 0
0313 0

Network Management version definitions for message handling
(Set in NML\$GB_CMD_VER)

LITERAL
SEQULST (NML\$C, GBL, 0, 1
 (PHASE2, 1) ! Phase II function
 (PHASE3_OR_4, 2) ! Phase III or IV function
);

NML return codes

LITERAL
SEQULST (NML\$R, GBL, 0, 1
 (STS_SUC, 1) ! Success
 (STS_FUN, -1*2) Unrecognized function or option
 (STS_INV, -2*2) Invalid message format
 (STS_PRI, -3*2) Privilege violation
 (STS_SIZ, -4*2) Message too long
 (STS_MPR, -5*2) Network management program error
 (STS_PTY, -6*2) Unrecognized parameter type
 (STS_MVE, -7*2) Incompatible management version
 (STS_CMP, -8*2) Unrecognized component
 (STS_IDE, -9*2) Invalid identification format
 (STS_LCO, -10*2) Line communication error
 (STS_STA, -11*2) Component in wrong state
 (STS_FOP, -13*2) File open error
 (STS_FCO, -14*2) Invalid file contents
 (STS_RES, -15*2) Resource error
 (STS_PVA, -16*2) Invalid parameter value
 (STS_LPR, -17*2) Line protocol error
 (STS_FIO, -18*2) File i/o error
 (STS_MLD, -19*2) Mirror link disconnected
 (STS_ROO, -20*2) No room for new entry
 (STS_MCF, -21*2) Mirror connect failed
 (STS_PNA, -22*2) Parameter not applicable
 (STS_PLO, -23*2) Parameter value too long
 (STS_HAR, -24*2) Hardware failure
 (STS_OPE, -25*2) Operation failure
 (STS_SYS, -26*2) System-specific network management function not supported
 (STS_PGP, -27*2) Invalid parameter grouping
 (STS_BLR, -28*2) Bad loopback response
 (STS_PMS, -29*2) Parameter missing
);

Network Management parameters

LITERAL
SEQULST (NML\$K, GBL, 0, 1
 (VERSION, 4) ! Network Management version
 (DEC_ECO, 0) ! DIGITAL ECO number
 (USER_ECO, 0) ! User ECO number
 (FAC_CODE, 505) ! Facility code
 (SIG_CODE, 505*65536) ! Signal code (505*16)
);

0314
0315
0316
0317
P 0318
P 0319
P 0320
P 0321
P 0322
P 0323
0324
0325
0326
0327
0328
P 0329
P 0330
P 0331
P 0332
P 0333
P 0334
P 0335
P 0336
P 0337
P 0338
P 0339
P 0340
P 0341
0342
0343
0344
0345
0346
0347
0348
0349
P 0350
P 0351
P 0352
P 0353
P 0354
P 0355
P 0356
P 0357
P 0358
P 0359
P 0360
P 0361
P 0362
P 0363
P 0364
P 0365
P 0366
P 0367
P 0368
P 0369
P 0370

```
! Data definitions
LITERAL
SEQULST (NML$K ,GBL,0,1
        ,(BYTE,)           ! Byte
        ,(WORD,)          ! Word
        ,(LONG,)          ! Longword
        !* QUAD             ! Quadword
        ,(STRING,)        ! String
        );

! Special permanent data base record search key parameter codes.
LITERAL
SEQULST (NML$C ,GBL,0,1
        ,(KEY_LINE, -1)    ! Line
        ,(KEY_SINK, -2)   ! Logging sink
        ! Node uses name or address
        ,(KEY_EXE, -3)    ! Executor node
        ! Object uses name
        ,(KEY_CIR, -4)    ! Circuit
        ,(KEY_NET, -5)    ! Protocol Module Network
        ,(KEY_X25_SERV, -6) ! X25-Server Module
        ,(KEY_X29_SERV, -7) ! X29-Server Module
        ,(KEY_TRACE, -8)  ! X25-Trace Module
        ,(KEY_NI_CONFIG, -9) ! NI Configurator Module
        ,(KEY_X25_ACCESS, -10) ! X25 Access Module Network
        );

! Internal entity id codes. Do not reorder. Entries in
! NML$AB_ENTITYDATA table depend on this order.
LITERAL
SEQULST (NML$C ,GBL,0,1
        ,(LINE,)          ! Line
        ,(LOGGING,)       ! Logging
        ,(SINK,)          ! Logging sink
        ,(NODE,)          ! Node (by address)
        ,(NODEBYNAME,)    ! Node by name
        ,(LOOPNODE,)      ! Loop node (by name only)
        ,(ADJACENT_NODE,) ! Nodes one hop away, volatile
        ! database only
        ,(EXFCUTOR,)      ! Executor node (by address=0)
        ,(OBJECT,)        ! Object
        ,(CIRCUIT,)       ! Circuit
        ,(CIRCUIT_ADJACENT,) ! By circuit, Nodes one hop away,
        ! volatile database only.
        ,(CIRCUIT_ADJ_SRV,) ! By circuit, service adjacencies
        ,(AREA,)          ! Area, volatile database only.
        ,(X25_ACCESS,)    ! X25-Access Module
        ,(PROT_NET,)      ! X25-Protocol Module Networks
        ,(PROT_DTE,)      ! X25-Protocol Module DTEs
        ,(PROT_GRP,)      ! X25-Protocol Module Groups
        ,(X25_SERV,)      ! X25-Server Module
```

```

P 0371 0      ,(X25_SERV_DEST,)      ! X25-Server Module Destination
P 0372 0      ,(TRACE,)          ! X25-Trace Module
P 0373 0      ,(TRACEPNT,)       ! X25-Trace Module Trecepoint
P 0374 0      ,(X29_SERV,)       ! X29-Server Module
P 0375 0      ,(X29_SERV_DEST,)  ! X29-Server Module Destination
P 0376 0      ,(NI_CONFIG,)     ! NI Configurator Module
P 0377 0      ,(LINKS,)         ! Logical links, volatile database only.
P 0378 0      ,(PROTOCOL,)      ! Protocol Module
P 0379 0
P 0380 0      ,(MAXENTITY,)      ! Maximum entity number
P 0381 0
P 0382 0
P 0383 0      ;
P 0384 0      ;
P 0385 0      ;
P 0386 0      ;
P 0387 0      ;
P 0388 0      ;
P 0389 0      ;
P 0390 0      ;
P 0391 0      ;
P 0392 0      ;
P 0393 0      ;
P 0394 0      ;
P 0395 0      ;
P 0396 0      ;
P 0397 0      ;
P 0398 0
    
```

Internal information table index codes.

LITERAL
 SEQULIST

```

(NML$C ,GBL,0,1
(SUMMARY,)      ! Summary          (NMASC_INF_SUM)
(STATUS,)       ! Status           (NMASC_INF_STA)
(CHARACTERISTICS,) ! Characteristics (NMASC_INF_CHA)
(COUNTERS,)     ! Counters        (NMASC_INF_COU)
(EVENTS,)       ! Events          (NMASC_INF_EVE)
(ZERO,)         ! Zero counters
(SERVICE,)     ! Service parameters
(MAXINFO,)     ! Maximum information type
    
```

Network Management Node database definitions. Used for manipulating the node permanent database. This database (unlike the other entity permanent databases) uses 4 ISAM keys.

```
MACRO NMNSL_KEY_LIS = 0,0,32,0%; ! 3rd alternate key = List node (consists of node address key concatenated with node type key)
MACRO NMNSW_KEY_ADD = 0,0,16,0%; ! Primary key in record = node address
MACRO NMNSW_KEY_TYP = 2,0,16,0%; ! 1st alternate key in record = node type (executor, remote, or loopnode).
MACRO NMNST_KEY_NAM = 4,0,0,0%; ! 2nd alternate key in record = node name
LITERAL NMNSS_KEY_NAM = 6;
LITERAL NMNSK_NODE_KEYS_LEN = 10;
LITERAL NMNSK_NODE_KEYS_LEN = 10; ! Length of all three keys.
MACRO NMNSA_NOD_PARAMS = 10,0,32,0%; ! Beginning of node's NICE parameters in the record.
```

LITERAL \$EQUILST (NMNSC_,GBL,0,1

```
Keys for accessing node permanent database.
(ADD_KEY_REF, 0) ! The primary key = node address
(TYP_KEY_REF, 1) ! The 1st alternate key = node type (nml$c typ exec, nml$c typ remote, nml$c typ loopnode). Overlaps with node address key.
(NAM_KEY_REF, 2) ! The 2nd alternate key = node name
(LIS_KEY_REF, 3) ! The 3rd alternate key = node address concatenated with node type. Used to LIST nodes in order by address, but with exec first, then remotes, and last loopnodes.

Lengths of node permanent database keys
(ADD_KEY_LEN, 2) ! The primary key = node address
(TYP_KEY_LEN, 2) ! The first alternate key overlaps with the node address key.
(NAM_KEY_LEN, 6) ! The second alternate key = node name
(LIS_KEY_LEN, 4) ! The third alternate key = node address concatenated with node type.

Key values for node key = type. The LIST key concatenates the node address key with the node type key. This allows the the LIST command to get nodes by type and, within type, sequentially by node address. The key value is constructed with a zero for the node address! hence when you do a $GET of (type OR 0) with a match type of GTR, it will get the first node of that type in the file. Subsequent sequential reads will return the nodes of that type in ascending order by address.
(TYP_EXEC, 0) ! type = executor node
```

0399 0
0400 0
0401 0
0402 0
0403 0
0404 0
0405 0
0406 0
0407 0
0408 0
0409 0
0410 0
0411 0
0412 0
0413 0
0414 0
0415 0
0416 0
0417 0
0418 0
0419 0
0420 0
P 0421 0
P 0422 0
P 0423 0
P 424 0
P 0425 0
P 0426 0
P 0427 0
P 0428 0
P 0429 0
P 0430 0
P 0431 0
P 0432 0
P 0433 0
P 0434 0
P 0435 0
P 0436 0
P 0437 0
P 0438 0
P 0439 0
P 0440 0
P 0441 0
P 0442 0
P 0443 0
P 0444 0
P 0445 0
P 0446 0
P 0447 0
P 0448 0
P 0449 0
P 0450 0
P 0451 0
P 0452 0
P 0453 0
P 0454 0
P 0455 0

.....
P 0456 0
P 0457 0
P 0458 0
P 0459 0
P 0460 0
P 0461 0
P 0462 0
P 0463 0
P 0464 0
P 0465 0
P 0466 0
0467 0
0468 0
.....

```
(TYP_REMOTE, 1)      ! type = a remote node
(TYP_LOOPNODE, 2)   ! type = a loopnode

: Input values to node database routines. Used for determining
: what RMS operations to perform.

(PUT_REC, 1)         ! Do a $PUT (write a new record)
(UPDATE_REC, 2)     ! Do a $UPDATE (update an existing record)
(DELETE_REC, 3)     ! Do a $DELETE (delete a record)
(GET_REC, 4)        ! Do a $GET (read a record)
);
```

0469 0
0470 00
0471 000
0472 0000
0473 00000
0474 000000
0475 0000000
0476 00000000
0477 000000000
0478 0000000000
0479 00000000000
0480 000000000000
0481 0000000000000
0482 00000000000000
0483 000000000000000
0484 0000000000000000
0485 00000000000000000
0486 000000000000000000
0487 0000000000000000000
0488 00000000000000000000
0489 000000000000000000000
0490 0000000000000000000000
0491 00000000000000000000000
0492 000000000000000000000000
0493 0000000000000000000000000
0494 00000000000000000000000000
0495 000000000000000000000000000
0496 0000000000000000000000000000
0497 00000000000000000000000000000
0498 000000000000000000000000000000
0499 0000000000000000000000000000000
0500 00000000000000000000000000000000
0501 0000000000000000000000000000000000

Message segment block (MSB) definitions

...\$MSBDEF

```
MACRO      MSB$L_FLAGS      = 0,0,32,0%;           ! Flags
LITERAL    MSB$V_CODE_FLD   = 0,0,1,0%;           ! Status code present (not used)
MACRO      MSB$M_CODE_FLD   = 1^1 - 1^0;           ! Error detail field present (DETAIL)
LITERAL    MSB$M_DET_FLD    = 0,1,1,0%;           ! Message text field present (TEXT)
MACRO      MSB$V_MSG_FLD    = 0,2,1,0%;           ! Second line of message text present (TEXT2)
LITERAL    MSB$M_MSG_FLD    = 1^3 - 1^2;           ! Entity descriptor field present (ENTITY)
MACRO      MSB$V_MSG2_FLD   = 0,3,1,0%;           ! Data descriptor field present (DATA)
LITERAL    MSB$M_MSG2_FLD   = 1^4 - 1^3;           ! System message field present (TEXT)
MACRO      MSB$V_ENTD_FLD   = 0,4,1,0%;           ! Status code
LITERAL    MSB$M_ENTD_FLD   = 1^5 - 1^4;           ! Detail
MACRO      MSB$V_DATA_FLD   = 0,5,1,0%;           ! Status code for text message.
LITERAL    MSB$M_DATA_FLD   = 1^6 - 1^5;           ! Status code for second line of text msg.
MACRO      MSB$V_SYSM_FLD   = 0,6,1,0%;           ! Entity descriptor address
LITERAL    MSB$M_SYSM_FLD   = 1^7 - 1^6;           ! Data descriptor address

MACRO      MSB$B_CODE       = 4,0,8,0%;           ! Status code
MACRO      MSB$W_DETAIL     = 8,0,16,0%;          ! Detail
MACRO      MSB$L_TEXT       = 12,0,32,0%;         ! Status code for text message.
MACRO      MSB$L_TEXT2     = 16,0,32,0%;         ! Status code for second line of text msg.
MACRO      MSB$A_ENTITY     = 20,0,32,0%;        ! Entity descriptor address
MACRO      MSB$A_DATA      = 24,0,32,0%;        ! Data descriptor address
LITERAL    MSB$C_LENGTH    = 28;                ! Maximum MSB size
LITERAL    MSB$K_LENGTH    = 28;
```

0502 0
0503 00
0504 00
0505 00
0506 00
0507 00
0508 00
0509 00
0510 00
0511 00
0512 00
P 0513 00
P 0514 00
P 0515 00
P 0516 00
P 0517 00
P 0518 00
P 0519 00
P 0520 00
P 0521 00
0522 00
0523 00
0524 00
P 0525 00
P 0526 00
P 0527 00
P 0528 00
P 0529 00
P 0530 00
P 0531 00
P 0532 00
P 0533 00
0534 00
0535 00

NML internal logging (debugging) flags
These flags are used to enable logging of specified data to the NML log file. The flags are defined by translating the logical name NML\$LOG.
...\$DBGDEF

LITERAL
\$EQU_{LIST} (DBG\$C ,GBL,0,1
 .(NETIO,)
 .(FILEIO,)
 .(NPARSE,)
 .(LOOPIO,)
 .(ACPIO,)
 .(MOPIO,)
 .(SRVTRC,)
 .(EVENTS,)
);

! Network send/receive logging
! File read/write logging
! NPARSE state transition logging
! Loopback transmit/receive logging
! NETACP QIO logging
! MOP send/receive logging
! Trace service operations
! Network event (EVL) logging

LITERAL
\$EQU_{LIST} (DBG\$C ,GBL,16,1
 .(DMPNOD,)
 .(DMP_LIN,)
 .(DMPLOG,)
 .(DMPOBJ,)
 .(DMP_CIR,)
 .(DMPX25,)
 .(DMPX29,)
 .(DMP_CNF,)
);

! Dump node permanent data base file
! Dump line permanent data base file
! Dump logging permanent data base file
! Dump object permanent data base file
! Dump circuit permanent data base file
! Dump X25 module permanent data base file
! Dump X29 module permanent data base file
! Dump Configurator Module permanent data base file

0536 0
0537 0
0538 0
0539 0
0540 0
0541 0
0542 0
0543 0
0544 0
0545 0
0546 0
0547 0
0548 0
0549 0
0550 0
0551 0

! Parameter semantic table (PST) definitions

!...\$PSTDEF

MACRO	PST\$W_DATAID	= 0,0,16,0%;	! DNA parameter code
MACRO	PST\$B_FORMAT	= 2,0,8,0%;	! Parameter format (byte, word, longword, etc.)
MACRO	PST\$B_DATATYPE	= 3,0,8,0%;	! Data type code (coded, coded multiple, etc.)
MACRO	PST\$L_MINVALUE	= 4,0,32,0%;	! Minimum value or string length
MACRO	PST\$L_MAXVALUE	= 8,0,32,0%;	! Maximum value or string length
MACRO	PST\$L_NFBID	= 12,0,32,0%;	! ACP parameter identifier
LITERAL	PST\$C_ENTRYLEN	= 16;	
LITERAL	PST\$K_ENTRYLEN	= 16;	! Parameter semantic table entry length

0552 0
0553 0
0554 0
0555 0
0556 0
0557 0
0558 0
0559 0
0560 0
0561 0
0562 0
0563 0
0564 0
0565 0
0566 0
0567 0
0568 0
0569 0
0570 0
0571 0
0572 0
0573 0
0574 0
0575 0
0576 0
0577 0
0578 0
0579 0
0580 0
0581 0
0582 0
0583 0
0584 0
0585 0
0586 0
0587 0
0588 0
0589 0
0590 0
0591 0
0592 0
0593 0
0594 0
0595 0
0596 0
0597 0
0598 0
0599 0

```
Entity information table definitions.
...$EITDEF
MACRO      EIT$B_FILEID   = 0,0,8,0%;      ! Permanent data base file id code
MACRO      EIT$W_DETAIL  = 1,0,16,0%;     ! NICE error detail entity code
MACRO      EIT$W_KEY     = 3,0,16,0%;     ! Permanent data base search key
MACRO      EIT$B_DATABASE = 5,0,8,0%;     ! Volatile data base ID
MACRO      EIT$L_SRCH_ID1 = 6,0,32,0%;    ! Volatile data base search key one ID for one entity
MACRO      EIT$L_SRCH_ID2 = 10,0,32,0%;   ! Volatile data base search key two ID for one entity

SHOW KNOWN search key ID, length, value, and operator.
MACRO      EIT$L_KNO_SRCH_ID1 = 14,0,32,0%; ! Search key one ID
MACRO      EIT$L_KNO_SRCH_LEN1 = 18,0,32,0%; ! Search key one length
MACRO      EIT$L_KNO_SRCH_VAL1 = 22,0,32,0%; ! Search key one value
MACRO      EIT$B_KNO_OPERT = 26,0,8,0%;    ! Sense search one operator (EQL, NEQ, etc.)

SHOW ACTIVE search key ID, length, value, and operator.
MACRO      EIT$L_ACT_SRCH_ID1 = 27,0,32,0%; ! Search key one ID
MACRO      EIT$L_ACT_SRCH_LEN1 = 31,0,32,0%; ! Search key one length
MACRO      EIT$L_ACT_SRCH_VAL1 = 35,0,32,0%; ! Search key one value
MACRO      EIT$B_ACT_OPERT = 39,0,8,0%;    ! Sense of search one operator (EQL, NEQ, etc.)

MACRO      EIT$A_ALLTAB = 40,0,32,0%;     ! Parameter table for SET ALL
LITERAL    EIT$C_ENTRYLEN = 44;
LITERAL    EIT$K_ENTRYLEN = 44;          ! Entry length

Change parameter table definitions.
...$CPTDEF
MACRO      CPT$W_PSTINDEX = 0,0,16,0%;    ! Parameter semantic table index
MACRO      CPT$A_DEFINE_RTN = 2,0,32,0%;  ! Define routine address
MACRO      CPT$A_PURGE_RTN = 6,0,32,0%;   ! Purge routine address
! F SET_RTN,A ! Set routine address
! F CLEAR_RTN,A ! Clear routine address
LITERAL    CPT$C_ENTRYLEN = 10;
LITERAL    CPT$K_ENTRYLEN = 10;          ! Length of table entry
```

0600 0
0601 0
0602 0
0603 0
0604 0
0605 0
0606 0
0607 0
0608 0
0609 0
0610 0
0611 0
0612 0
0613 0
0614 0
0615 0
0616 0
0617 0
0618 0
0619 0
0620 0
0621 0
0622 0
0623 0
0624 0
0625 0
0626 0
0627 0
0628 0
0629 0
0630 0
0631 0
0632 0
0633 0
0634 0
0635 0
0636 0
0637 0
0638 0
0639 0
0640 0
0641 0
0642 0
0643 0
0644 0
0645 0
0646 0
0647 0
0648 0
0649 0
0650 0
0651 0
0652 0
0653 0
0654 0
0655 0
0656 0

Change dispatch table definitions. This table is used by NMLCHANGE or NMLREAD to dispatch to the correct change routine for the entity.

!...\$DTDEF

MACRO DT\$L_DISPATCH = 0,0,32,0%; ! Dispatch routine for this entity

Dispatch table definitions for NICE change operations.

MACRO DT\$S_SEDE_PARSE = 4,0,32,0%; ! Set/Define NPARSE table for parsing the

MACRO DT\$S_CLPU_PARSE = 8,0,32,0%; ! Clear/Purge NPARSE table for parsing the
NICE command parameters

MACRO DT\$A_SET_ROUTINES = 12,0,0,0%; ! SET routines for entity.

LITERAL DT\$S_SET_ROUTINES = 16;
MACRO DT\$A_CLEAR_ROUTINES = 28,0,0,0%; ! CLEAR routines for entity.

LITERAL DT\$S_CLEAR_ROUTINES = 16;
MACRO DT\$A_DEFINE_ROUTINES = 44,0,0,0%; ! DEFINE routines for entity.

LITERAL DT\$S_DEFINE_ROUTINES = 16;
MACRO DT\$A_PURGE_ROUTINES = 60,0,0,0%; ! PURGE routines for entity.

LITERAL DT\$S_PURGE_ROUTINES = 16;

Dispatch table definitions for NICE read operations.

MACRO DT\$A_SHOW_ROUTINES = 4,0,0,0%; ! SHOW routines for entity.

LITERAL DT\$S_SHOW_ROUTINES = 20;

MACRO DT\$A_LIST_ROUTINES = 24,0,0,0%; ! LIST routines for entity

LITERAL DT\$S_LIST_ROUTINES = 20;

!...\$CHGDEF

Each of the DT\$ change ROUTINES fields breaks down into the following routine offsets. They are offsets in order to make NMLSHR PIC.

MACRO CHG\$S_ENTITY = 0,0,32,0%; ! Offset to change routine for single entity

MACRO CHG\$S_ENTITY_W_QUAL = 4,0,32,0%; ! Offset to change routine for single entity
with a qualifier

MACRO CHG\$S_KNOWN = 8,0,32,0%; ! Offset to change routine for KNOWN entities.

MACRO CHG\$S_KNOWN_W_QUAL = 12,0,32,0%; ! Offset to change routine for KNOWN entities
with a qualifier

LITERAL CHG\$C_CHG_TABLEN = 16;

LITERAL CHG\$K_CHG_TABLEN = 16; ! Length of dispatch table

!...\$RDDEF

Each of the DT\$ read ROUTINES fields breaks down into the following routine offsets. They are offsets in order to make NMLSHR PIC.

```
0657 0 !
0658 0 MACRO RDSL_ENTITY = 0,0,32,0%; ! Offset to read routine for single entity
0659 0 MACRO RDSL_ENTITY_W_QUAL = 4,0,32,0%; ! Offset to read routine for single entity
0660 0 ! with a qualifier
0661 0 MACRO RDSL_KNOWN = 8,0,32,0%; ! Offset to read routine for KNOWN entities.
0662 0 MACRO RDSL_KNOWN_W_QUAL = 12,0,32,0%; ! Offset to read routine for KNOWN entities
0663 0 ! with a qualifier
0664 0 MACRO RDSL_ACTIVE = 16,0,32,0%; ! Offset to read routine for ACTIVE entities.
0665 0 LITERAL RDSK_RD_TABLEN = 20;
0666 0 LITERAL RDSK_RD_TABLEN = 20; ! Length of dispatch table
0667 0
0668 0
0669 0
0670 0 !...$ZERDEF
0671 0 !
0672 0 ! Each of the ZERS zero ROUTINES fields breaks down into the following
0673 0 ! routine offsets. They are offsets in order to make NMLSHR PIC.
0674 0 !
0675 0 MACRO ZERSL_DISPATCH = 0,0,32,0%; ! Dispatch routine for this entity
0676 0 MACRO ZERSL_ENTITY = 4,0,32,0%; ! Offset to zero routine for single entities.
0677 0 MACRO ZERSL_KNOWN = 8,0,32,0%; ! Offset to zero routine for KNOWN entities.
0678 0 LITERAL ZERSK_ZER_TABLEN = 12;
0679 0 LITERAL ZERSK_ZER_TABLEN = 12; ! Length of dispatch table.
0680 0
```

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0697
0698
0699
0700
0701
0702
0703
0704
0705
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0737

: This file defines the event data base ures.

: Event source block definitions.

...\$SRCDEF

```
MACRO      SRC$W_LENGTH      = 0,0,16,0%;      ! Byte count of entire source block
MACRO      SRC$B_SINKTYPE    = 2,0,8,0%;      ! Sink type code:  NMASC_SNK_CON
                                                NMASC_SNK_FIL
                                                NMASC_SNK_MON
MACRO      SRC$B_SRCTYPE     = 3,0,8,0%;      ! Source type code: NMASC_ENT_KNO
                                                NMASC_ENT_NOD
                                                NMASC_ENT_CIR
                                                NMASC_ENT_LIN
MACRO      SRC$T_SOURCE      = 4,0,0,0%;      ! Source id string
LITERAL    SRC$$_SOURCE      = 18;
MACRO      SRC$W_NODADR      = 4,0,16,0%;      Source = node (NMASC_ENT_NOD)
                                                ! Node address
                                                Source = line or circuit (NMASC_ENT_LIN or
                                                NMASC_ENT_CIR)
MACRO      SRC$B_IDLENGTH    = 4,0,8,0%;      ! Source id string length
MACRO      SRC$T_ID          = 5,0,0,0%;      ! Source id string
LITERAL    SRC$$_ID          = 17;
MACRO      SRC$W_MSKCOUNT   = 22,0,16,0%;     ! Count of event blocks (mask sets)
LITERAL    SRC$C_LENGTH      = 24;
LITERAL    SRC$K_LENGTH      = 24;           ! Length of fixed part of source block
```

: Event block definitions.

...\$EVTDEF

```
MACRO      EVT$W_CLASS       = 0,0,16,0%;     ! Event class
MACRO      EVT$Q_LOGMSK      = 4,0,0,0%;     ! Event log mask
LITERAL    EVT$$_LOGMSK      = 8;
MACRO      EVT$Q_FILTERMSK   = 12,0,0,0%;     ! Event filter mask
LITERAL    EVT$$_FILTERMSK   = 8;
LITERAL    EVT$C_LENGTH      = 20;
LITERAL    EVT$K_LENGTH      = 20;           ! Length of event block
```

: Event table definitions.

...\$ETBDEF

```
MACRO      ETB$W_CLASS       = 0,0,16,0%;     ! Event class
MACRO      ETB$A_GLOBAL      = 2,0,32,0%;     ! Global filter mask
```

```
0738 0 MACRO ETBSA_NODE = 6,0,32,0%: ! Node filter mask
0739 0 MACRO ETBSA_CIRCUIT = 10,0,32,0%: ! Circuit filter mask
0740 0 MACRO ETBSA_LINE = 14,0,32,0%: ! Line filter mask
0741 0 MACRO ETBSA_MODULE = 18,0,32,0%: ! Module filter mask
0742 0 LITERAL ETBSC_ENTRYLEN = 22: ! Length of event table entry
0743 0 LITERAL ETBSK_ENTRYLEN = 22:
0744 0
0745 0 !
0746 0 ! End of NMLDEF.MDL
0747 0 !
```

NM
VO

0748 0
0749 0
0750 0
0751 0
0752 0
0753 0
0754 0
0755 0
0756 0
0757 0
0758 0
0759 0
0760 0
0761 0
0762 0
0763 0
0764 0
0765 0
0766 0
0767 0
0768 0
0769 0
0770 0
0771 0
0772 0
0773 0
0774 0
0775 0
0776 0
0777 0
0778 0
0779 0
0780 0
0781 0
0782 0
0783 0
0784 0
0785 0
0786 0
0787 0
0788 0
0789 0
0790 0
0791 0
0792 0
0793 0
0794 0
0795 0
0796 0
0797 0
0798 0
0799 0
0800 0
0801 0
0802 0
0803 0
0804 0

XTITLE 'NMLDDL - NML Data Definitions'
IDENT = 'V04-000'

```
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++
FACILITY: DECnet-VAX Network Management Listener

ABSTRACT:

This module contains macro and symbol definitions used by all NML modules.

ENVIRONMENT: VAX/VMS Operating System

AUTHOR: Distributed Systems Software Engineering

CREATION DATE: 30-DEC-1979

MODIFIED BY:

V03-006 MKP0008 Kathy Perko 24-June-1984
Increase the size of the QIO P4 buffer to the minimum
value SYSGEN allows for MAX BUFFER. This is a slight
improvement on the limit for the number of sources which
can be logged for a single sink node.

V03-005 MKP0007 Kathy Perko 9-April-1983
Add globals for executor address in the volatile and
permanent databases.

V03-004 MKP0006 Kathy Perko 19-Sept-1983
Convert node permanent database to multiple ISAM keys for better
performance. Also, make NCP response message entity buffer
size bigger and global - for X25 tracepoint names.

0805 0
0806 0
0807 0
0808 0
0809 0
0810 0
0811 0
0812 0
0813 0
0814 0
0815 0
0816 0
0817 0
0818 0
0819 0
0820 0
0821 0
0822 0
0823 0
0824 0
0825 0
0826 0
0827 0
0828 0
0829 0
0830 0
0831 0
0832 0
0833 0
0834 0
0835 0
0836 0
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0841 0
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0843 0
0844 0
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0846 0
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0851 0
0852 0
0853 0
0854 0
0855 0
0856 0
0857 0
0858 0
0859 0
0860 0
0861 0

V03-003 MKP0005 Kathy Perko 19-April-1983
Delete service functions from NML.

V03-002 MKP0004 Kathy Perko 28-June-1982
Shrink P4 buffer size from 730 bytes to 512 to get rid
of Q10 quota exceeded errors.
Add macro for generating Search Key IDs for Entity Table.
Rename qualifier to use its CPT index instead of the Network
Management parameter code.

V03-001 MKP0003 Kathy Perko 17-Mar-1982
Rename some global fields so the names mean more.

V02-002 MKP0002 Kathy Perko 2-Nov-1981
Delete NML\$GW_CMD_CHAN

V02-001 MKP0001 Kathy Perko 14-Sept-1981
Make P4 buffer size smaller so systems with SYSGEN parameter,
MAXBUF, don't get buffer quota exceeded for SHOW CIRCUIT
CHARACTERSITICS.

--

Miscellaneous symbols

LITERAL
FALSE = 0,
TRJE = 1;

The following symbols are internal parameter codes. The values all have
bit 15 set, indicating a counter value, to avoid conflicts with other
network management parameter codes.

LITERAL
NMASC_PCNO_ASS = 1 ^ 15 OR 0, ; Loop node address
NMASC_PCLI_LCS = 1 ^ 15 OR 1, ; Line counters
NMASC_PCNO_ECS = 1 ^ 15 OR 2, ; Executor node counters
NMASC_PCNO_NCS = 1 ^ 15 OR 3, ; Node counters
NMASC_PCCI_CCS = 1 ^ 15 OR 4, ; Circuit counters
NMASC_PCXP_PCS = 1 ^ 15 OR 5, ; X-25 Protocol DTE counters.
NMASC_PCXS_SCS = 1 ^ 15 OR 6; ; X-25 Server counters

Structure declarations used for system defined structures to
save typing.

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>;

0862
0863
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0871
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0874
0875
0876
0877
0878
0879
0880
0881
0882
0883
0884
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0892
0893
0894
0895
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0902
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```
! Macro to generate Network ACP Control QIO (NFB) P1 buffer contents. The NFB
! describes SET, SHOW, CLEAR, and ZERO operations.
MACRO
  $NFB (FUNC, FLAGS, DATABASE, SRCH_KEY_ONE, OPER_ONE,
        SRCH_KEY_TWO, OPER_TWO) =
    BYTE ( %IF %IDENTICAL (FUNC, 0)           ! QIO function code.
           %THEN 0
           %ELSE %NAME ('NFB$C_FC_',FUNC)
           %FI),
    BYTE ( %IF %NULL (FLAGS)                  ! Error Update and Process
           %THEN 0                             ! Multiple Entries flags.
           %ELSE FLAGS
           %FI),
    BYTE ( %IF %IDENTICAL (DATABASE, 0)       ! ACP database to update.
           %THEN 0
           %ELSE %NAME ('NFB$C_DB_',DATABASE)
           %FI),
    BYTE (%IF %NULL (OPER_ONE)                ! Oper1
           %THEN 0
           %ELSE OPER_ONE
           %FI
          ),
    $$SRCH_KEY (DATABASE, SRCH_KEY_ONE),      ! Search key one ID
    $$SRCH_KEY (DATABASE, SRCH_KEY_TWO),      ! Search key two ID
    BYTE (%IF %NULL (OPER_TWO)                ! Oper2
           %THEN 0
           %ELSE OPER_TWO
           %FI
          ),
    BYTE (0),                                  ! Spare
    WORD (0),                                  ! variable cell size

    %IF NOT %NULL(%REMAINING)
    %THEN $FIELD_ID_LIST (DATABASE, %REMAINING)
           ,LONG (NFB$C_ENDOFLIST) ! End delimiter for field ID list.
    %ELSE
           LONG (NFB$C_ENDOFLIST) ! End delimiter for field ID list.
    %FI

    %,

    !
    ! Generate a Search Key ID for an NFB. If the Search key is null,
    ! use a wildcard search key ID.
    $$SRCH_KEY (DATABASE, SRCH_ID) =
    LONG ( %IF %NULL (SRCH_ID)
           %THEN NFB$C_WILDCARD
           %ELSE $FIELD_ID (DATABASE, SRCH_ID)
           %FI )

    %,

    !
    ! Generate a list of longwords containing the NETACP field IDs for
    ! the parameters. This iterative macro will generate as many
    ! field IDs as are supplied.
```


0919 0
0920 0
0921 0
0922 0
0923 0
0924 0
0925 0
0926 0
0927 0
0928 0
0929 0
0930 0
0931 0
0932 0
0933 0
0934 0
0935 0
0936 0
0937 0
0938 0
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0940 0
0941 0
0942 0
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0945 0
0946 0
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0948 0
0949 0
0950 0
0951 0
0952 0
0953 0
0954 0
0955 0
0956 0
0957 0
0958 0
0959 0
0960 0
0961 0
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0963 0
0964 0
0965 0
0966 0
0967 0
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0971 0
0972 0
0973 0
0974 0
0975 0

```
!
$FIELD_ID_LIST (DATABASE) [FIELD_ID] =
  LONG T$FIELD_ID (DATABASE, FIELD_ID)
  %.

$FIELD_ID (DATABASE, FIELD_ID) =
  %IF %IDENTICAL (FIELD_ID, NFB$C_WILDCARD) OR
  %IDENTICAL (FIELD_ID, NFB$C_COLLATE)
  %THEN
    FIELD_ID
  %ELSE
    %IF %NULL (FIELD_ID)
    %THEN 0
    %ELSE %NAME ('NFB$C_', DATABASE, '_', FIELD_ID)
    %FI
  %FI
  %;

!
  Macros to generate Network Control I/O request descriptors.
!
MACRO
  !
  ! Declare the NFB buffer (use the number of input parameters to figure
  ! out how big to make it) and set up a descriptor for it.
  !
  $NFB$DSC (NAM) =
    SWITCHES UNAMES;
    OWN
      _NFB : VECTOR [$NFB_ALLOCATION (%REMAINING)]
              INITIAL ($NFB (%REMAINING));
    BIND
      %NAME (NAM) = UPLIT (%ALLOCATION(_NFB), _NFB);
    UNDECLARE NFB;
    SWITCHES NOUNAMES
    %;

  $NFB_ALLOCATION [] =
    5+(MAX(0,%LENGTH-6))
    %;

!
  Macro to extract the bit number from bit field references
!
MACRO
  $BITN (O, B, W, S) = B
  %;

!
  Macro to signal status message
!
MACRO
  $SIGNAL_MSG [] =
    SIGNAL (NML$K_SIG_CODE, %REMAINING)
    %;

!
  Macro to create constant string descriptor
!
MACRO
```

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0984
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0992
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0994
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0996
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0998
0999
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1002
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1007
1008
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1010
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1021
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```
MACRO $ASCID [] =  
    (UPLIT (%CHARCOUNT(%STRING(%REMAINING)),  
    UPLIT BYTE (%STRING(%REMAINING))))  
%;  
MACRO $ASCIC [] =  
    UPLIT BYTE (%ASCIC %STRING (%REMAINING))  
%;  
: Macro to move an ASCII counted string to a buffer.  
MACRO $MOVE_ASCII (STRING, PTR) =  
    PTR = CH$MOVE (%CHARCOUNT (%ASCIC STRING),  
    UPLIT BYTE (%ASCIC STRING),  
    .PTR)  
%;  
MACRO DESCRIPTOR =  
    BBLOCK [8]  
%;  
: I/O Status Block definition  
FIELD  
    IOSB_FIELDS =  
    SET  
    IOS$W_STATUS = [0, 0, 16, 0], ! Status field  
    IOS$W_COUNT = [2, 0, 16, 0], ! Byte count field  
    IOS$L_INFO = [4, 0, 32, 0] ! Device dependent information  
    TES;  
MACRO $IOSB =  
    BBLOCK [8] FIELD (IOSB_FIELDS)  
%;  
: Macro to define Network Management version fields  
FIELD  
    NMV_FIELDS =  
    SET  
    NMV$B_VERSION = [0,0,8,0],  
    NMV$B_DEC_ECO = [1,0,8,0],  
    NMV$B_USER_ECO = [2,0,8,0]  
    TES;  
MACRO NMV = BBLOCK [3] FIELD (NMV_FIELDS)  
%;  
: Macro to define external symbols common to most of the modules.  
MACRO $NML_EXTDEF =
```

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EXTERNAL

Event data

NML\$GB_EVTSRCTYP : BYTE, ! Event source type
NML\$GQ_EVTSRCDS : DESCRIPTOR, ! Event source descriptor
NML\$GW_EVTCLASS : WORD, ! Event class
NML\$GB_EVTMSKTYP : BYTE, ! Mask type
NML\$GQ_EVTMSKDS : DESCRIPTOR, ! Mask descriptor
NML\$GW_EVTSNKADR : WORD, ! Sink node address

NML\$GW_ACP_CHAN,
NML\$GL_LOGMASK : BITVECTOR [32],
NML\$GQ_ENTSTRDSC : DESCRIPTOR,
NML\$AB_QIOBUFFER : BBLOCK [0],
NML\$GQ_QIOBFDSC : DESCRIPTOR,
NML\$AB_EXEBUFFER : VECTOR [0, BYTE],
NML\$GL_EXEDATPTR,
NML\$GQ_EXEDATDSC : DESCRIPTOR,
NML\$GQ_EXEBFDSC : DESCRIPTOR,
NML\$AB_RCVBUFFER : VECTOR [NML\$K_RCVBFLEN, BYTE],
NML\$GQ_RCVBFDSC : DESCRIPTOR,
NML\$AB_SNDBUFFER : VECTOR [NML\$K_SNDBFLEN, BYTE],
NML\$GQ_SNDBFDSC : DESCRIPTOR,
NML\$GL_RCVDATLEN,
NML\$AB_CPTABLE : BBLOCKVECTOR [0, CPT\$K_ENTRYLEN],
NML\$AB_MSGBLOCK : BBLOCK [MSB\$K_LENGTH],
NML\$AB_ENTITY_ID : BBLOCK [16],
NML\$AB_QUALIFIER_ID : BBLOCK [16],
NML\$AB_ENTITYDATA : BBLOCKVECTOR [, EIT\$K_ENTRYLEN],
NML\$AB_NML_NMV : NMV,
NML\$AB_PRMSEM : BBLOCKVECTOR [0, PST\$K_ENTRYLEN],
NML\$AB_RECBUF : BBLOCK [0],
NML\$AL_ENTINFNTAB : VECTOR [0],
NML\$AL_PERMINFTAB : VECTOR [0],
NML\$AW_PRM_DES : BBLOCKVECTOR [PDB\$K_NUMBER, 4, WORD],
NML\$GB_CMD_VER : BYTE,
NML\$GB_ENTITY_CODE : BYTE,
NML\$GB_ENTITY_FORMAT : BYTE,
NML\$GL_QUALIFIER_PST,
NML\$GB_QUALIFIER_FORMAT : BYTE,
NML\$GB_FUNCTION : BYTE,
NML\$GB_INFO : BYTE,
NML\$GB_OPTIONS : BYTE,
NML\$GL_PRM_CODE,
NML\$GL_PRS_FLGS : BLOCK [1],
NML\$GL_NML_ENTITY,
NML\$GQ_NETNAMDSC : DESCRIPTOR,
NML\$GQ_RECBFDS : DESCRIPTOR,
NML\$GW_PRMDESCNT : WORD;

NPARSE argument block structure definitions

MACRO

\$NPA_ARGDEF =
BUILTIN

```
MEM 1090 0
MEM 1091 0
MEM 1092 0
MEM 1093 0
MEM 1094 0
MEM 1095 0
MEM 1096 0
MEM 1097 0
MEM 1098 0
MEM 1099 0
MEM 1100 0
MEM 1101 0
MEM 1102 0
MEM 1103 0
MEM 1104 0
MEM 1105 0
MEM 1106 0
MEM 1107 0
MEM 1108 0
MEM 1109 0
MEM 1110 0
MEM 1111 0
MEM 1112 0
MEM 1113 0
MEM 1114 0
MEM 1115 0
MEM 1116 0
MEM 1117 0
MEM 1118 0
MEM 1119 0
MEM 1120 0
MEM 1121 0
MEM 1122 0
MEM 1123 0
MEM 1124 0
MEM 1125 0
MEM 1126 0
MEM 1127 0
MEM 1128 0
MEM 1129 0
MEM 1130 0

AP;
BIND
  NPARSE_BLOCK = AP : REF $NPA_BLKDEF;
%:
: NPARSE argument block definition macro
MACRO
  $NPA_BLKDEF =
  $BLOCK [NPASK_LENGTH0]
  %:
  : Buffer length parameters.
LITERAL
  NML$K_RCVBFLEN = 512,      ! Receive buffer length
  NML$K_SNDBFLEN = 512,      ! Send buffer length
  NML$K_NFBBFLEN = 256,      ! Max size for an NFB.
  NML$K_QIOBFLEN = 1200,     ! QIO buffer length
  NML$K_P2BUFLEN = 104,      ! Max length for P2 buffers.
  NML$K_RECBFLEN = 1024,     ! Record buffer length
  NML$K_ENTBUFLEN = 64,      ! Entity name buffer size.
  :
  : Maximum bytes of data in a permanent database record. Leaves room
  : for the node keys (which take up the most room) at the beginning of
  : the record.
  NML$K_MAX_REC_DATA = NML$K_RECBFLEN - NMNSK_NODE_KEYS_LEN,
  NML$K_PERM_KEYS_LEN = 2;    ! Key length for all permanent databases
  :                               except the node database.
:
: Parameter descriptor block (PDB) definitions.
LITERAL PDB$K_NUMBER = 32;    ! Number of parameter descriptor slots
MACRO PDB$W_INDEX = 0,0,16,0%; ! Parameter change table (CPT) index
MACRO PDB$W_COUNT = 1,0,16,0%; ! Parameter byte count
MACRO PDB$A_POINTER = 2,0,32,0%; ! Pointer to parameter value
LITERAL PDB$K_SIZE = 8;      ! Size of parameter descriptor entry
```

1131 0
1132 0
1133 0
1134 0
1135 0
1136 0
1137 0
1138 0
1139 0
1140 0
1141 0
1142 0
1143 0
1144 0
1145 0
1146 0
1147 0
1148 0
1149 0
1150 0
1151 0
1152 0
1153 0
1154 0
1155 0
1156 0
1157 0
1158 0
1159 0
1160 0
1161 0
1162 0
1163 0
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1165 0
1166 0
1167 0
1168 0
1169 0
1170 0
1171 0
1172 0
1173 0
1174 0
1175 0
1176 0

Version: 'V04-000'

```
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*****
```

NPARSE argument block field definitions

...\$NPADEF

MACRO	NPASL_COUNT	= 0,0,32,0%;	!	Argument count (NPASK_COUNT0)
LITERAL	NPASK_COUNT0	= 8;	!	Argument count value
MACRO	NPASL_MSGCNT	= 4,0,32,0%;	!	Count of bytes remaining in message
MACRO	NPASL_MSGPTR	= 8,0,32,0%;	!	Pointer to remaining message
MACRO	NPASL_OPTIONS	= 12,0,32,0%;	!	Options (not used)
MACRO	NPASL_FLDCNT	= 16,0,32,0%;	!	Count of bytes in matched field
MACRO	NPASL_FLDPTR	= 20,0,32,0%;	!	Pointer to matched field
MACRO	NPASL_LONG	= 24,0,32,0%;	!	Matched longword value
MACRO	NPASB_BYTE	= 24,0,8,0%;	!	byte value
MACRO	NPASW_WORD	= 24,0,16,0%;	!	word value
MACRO	NPASL_NUMBER	= 28,0,32,0%;	!	Matched signed value (not used)
MACRO	NPASL_PARAM	= 32,0,32,0%;	!	Action routine parameter value
LITERAL	NPASC_LENGTH0	= 36;	!	
LITERAL	NPASK_LENGTH0	= 36;	!	Size of argument block structure

```
1177 0 |
1178 00 | Version: 'V04-000'
1179 000 |
1180 0000 | ++
1181 00000 | NMATAIL.B32
1182 000000 |
1183 0000000 | Source to undeclare the macros required for the precompile of
1184 00000000 | NMALIBRY.B32 so they do not appear in the library.
1185 000000000 | --
1186 0000000000 |
1187 00000000000 |
1188 000000000000 | UNDECLARE %QUOTE $EQLST,
1189 0000000000000 | %QUOTE GET1ST_,
1190 00000000000000 | %QUOTE GET2ND_,
1191 000000000000000 | %QUOTE NUL2ND_
1192 0000000000000000 | .
1193 00000000000000000 |
1194 000000000000000000 |
1195 000000000000000000 | End of NMATAIL.B32
1196 0000000000000000000 |
```

COMMAND QUALIFIERS

BLISS/LIBRARY=LIBS:NMLLIB/LIST=LISS:NMLLIB SRCS:NMAHEAD+LIBS:NMLDEF+SRCS:NMLDDL+LIBS:NPADEF+SRCS:NMATAIL

: Run Time: 00:13.2
: Elapsed Time: 00:17.8
: Lines/CPU Min: 5424
: Lexemes/CPU-Min: 54721
: Memory Used: 87 pages
: Library Precompilation Complete

Terminal window 1	Terminal window 2	Terminal window 3	Terminal window 4	Terminal window 5	Terminal window 6	Terminal window 7	Terminal window 8	Terminal window 9	Terminal window 10	Terminal window 11	Terminal window 12
Terminal window 13	Terminal window 14	Terminal window 15	Terminal window 16	Terminal window 17	Terminal window 18	Terminal window 19	Terminal window 20	Terminal window 21	Terminal window 22	Terminal window 23	Terminal window 24
Terminal window 25	Terminal window 26	Terminal window 27	Terminal window 28	Terminal window 29	Terminal window 30	Terminal window 31	Terminal window 32	Terminal window 33	Terminal window 34	Terminal window 35	Terminal window 36
Terminal window 37	Terminal window 38	Terminal window 39	Terminal window 40	Terminal window 41	Terminal window 42	Terminal window 43	Terminal window 44	Terminal window 45	Terminal window 46	Terminal window 47	Terminal window 48
Terminal window 49	Terminal window 50	Terminal window 51	Terminal window 52	Terminal window 53	Terminal window 54	Terminal window 55	Terminal window 56	Terminal window 57	Terminal window 58	Terminal window 59	Terminal window 60
Terminal window 61	Terminal window 62	Terminal window 63	Terminal window 64	Terminal window 65	Terminal window 66	Terminal window 67	Terminal window 68	Terminal window 69	Terminal window 70	Terminal window 71	Terminal window 72
Terminal window 73	Terminal window 74	Terminal window 75	Terminal window 76	Terminal window 77	Terminal window 78	Terminal window 79	Terminal window 80	Terminal window 81	Terminal window 82	Terminal window 83	Terminal window 84
Terminal window 85	Terminal window 86	Terminal window 87	Terminal window 88	Terminal window 89	Terminal window 90	Terminal window 91	Terminal window 92	Terminal window 93	Terminal window 94	Terminal window 95	Terminal window 96
Terminal window 97	Terminal window 98	Terminal window 99	Terminal window 100	Terminal window 101	Terminal window 102	Terminal window 103	Terminal window 104	Terminal window 105	Terminal window 106	Terminal window 107	Terminal window 108
Terminal window 109	Terminal window 110	Terminal window 111	Terminal window 112	Terminal window 113	Terminal window 114	Terminal window 115	Terminal window 116	Terminal window 117	Terminal window 118	Terminal window 119	Terminal window 120
Terminal window 121	Terminal window 122	Terminal window 123	Terminal window 124	Terminal window 125	Terminal window 126	Terminal window 127	Terminal window 128	Terminal window 129	Terminal window 130	Terminal window 131	Terminal window 132