# HONEYWELL

## DPS 7
## NETWORK
## ADMINISTRATION
## UTILITIES
## USER'S GUIDE

## SOFTWARE

DPS 7

# NETWORK ADMINISTRATION
# UTILITIES
# USER'S GUIDE

SUBJECT

> Use of the Principal Network Administration Utilities in a GCOS 7
> Environment

SOFTWARE SUPPORTED

> GCOS 7 Release V1

DOCUMENT NUMBER

> 47 A2 10UC

ORDER NUMBER

> 10UC-00

August 1985

**Honeywell**

# *Attention Readers*

The GCOS 7 document set describes products and services available in many countries; some products described may not be available in every country. For example, the following products and product families are not available in the United States:

- DPS 7/60, 7/70, 7/80 and DPS 7/XX7 Central System Families, including bi-processors (e.g., DPS 7/627, 7/727, 7/827)

- TRANSPAC (the Public Data Network in France)

- DKU7007/7107/7211 terminals, KDS7265/66/75/76 terminals, and QUESTAR terminals

If you have questions regarding any Honeywell product or service, please contact your Honeywell Marketing Representative.

## TERMINOLOGY

Certain terms used in GCOS 7 documents are not applicable to all DPS 7 systems. To help you relate these terms to *your* DPS 7 system, the following equivalency list provides various interpretations for each of these terms. Familiarize yourself with these terms so you can apply them to your system if you encounter them in the documentation.

| Term(s) in Document | Equivalent Term(s) |
|---|---|
| DN7100, UNCP | DN8, DATANET 8, or Front-end Network Processor (FNP) |
| DSS | DPS6-DSA |
| Mini 6 | DPS 6 |
| Mini 6/DSS | DPS6-DSA |
| MSC-E | MSP4575, MSP4570 (on DPS 7), MSP4500, Integrated MSP on CPS4251 (on Level 64) |
| MSC-RV | MSP4270 on DPS 7/E |
| MSU0337/0338 | MSU0330/0331 (MS/D80)[1] |
| MSU0395 | MSU0390 (MS/D300)[1] |
| MSU0455 | MSU0452 (MS/M452)[1] |
| MSU0500 | MSU0555 (MS/M500)[1] |

---

[1]Terms enclosed within parentheses are the exact control language parameters to be entered into the system when appropriate.

| Term(s) in Document | Equivalent Term(s) |
|---|---|
| MTC-E | MTP4270, MTP4275 (on DPS 7), MTP4200 (on Level 64) |
| TTU8124 | PRU1001/1003, TWU1001/1003 |
| TTU8126 | PRU1005, TWU1005 |
| TTU8221 | PRU1901, TWU1901 |
| DPS 2, DPS 4, DPS 6 | DPS 330 |

## OPERATING SYSTEM REFERENCES

The following list shows operating system release equivalencies:

| Document Reference | Operating System Release |
|---|---|
| 1D, 1D.n | GCOS 64 Release 0400 |
| 1E.0, 1E.1, 1E.2, 1E.3 | GCOS 64 Release 0500 |
| 1E.4 (and up) | GCOS 64 Release 0501 |
| 1E | GCOS 64 Release 0500 or 0501 (interchangeable) |

## DOCUMENT ORDER NUMBERS

The GCOS 7 software contains help messages that refer to GCOS 7 documents by eight-character document numbers (e.g., 47 A2 01UC, 47 A2 11UD). Use only the last four characters (e.g., 01UC, 11UD) to identify and/or order documents. A complete list of GCOS 7 documents can be found in the *System Administrator's Manual* (01US), the *IOF Terminal User's Reference Manual: Part I* (01UJ), and the *GCOS 7 Software Release Bulletin* (01UG).

# *Preface*

This document describes the Network Administration Utilities in the GCOS 7 environment.

Section I gives a brief introduction. Section II describes the use of the Log File Editor. Section III describes the use of the Dump Editor. Appendix A provides an example of a Log File List.

## REMARKS FORM

Suggestions and criticisms concerning the form, content and purpose of this manual are invited. A Technical Publications Remarks Form is provided at the end of the Manual for this purpose.

## HEADING HIERARCHY

Each section of this document is structured according to the heading hierarchy shown below. Each heading indicates the relative level of the text that follows it:

| *Level* | *Heading format* |
|---|---|
| 1 (highest) | <u>ALL CAPITAL LETTERS, UNDERLINED</u> |
| 2 | <u>Initial Capital Letters, Underlined</u> |
| 3 | ALL CAPITAL LETTERS, NOT UNDERLINED |
| 4 | Initial Capital Letters, Not Underlined |
| 5 (lowest) | ALL CAPITAL LETTERS FOLLOWED BY COLON (:)<br>Text begins on the same line. |

CONTENTS

TABLES

# SECTION I

## INTRODUCTION


GCOS provides editing utilities for the log and dump files used in the context of the Distributed Systems Architecture (DSA). The affected systems, connectable to DPS 7 under DSA, include:

● Distributed System Satellite (DSS); i.e., Mini 6/DSS

● DATANET 7100.

These systems will operate without changes to existing applications, but the GCOS 7 host operating system will require the presence of the Network Administration Utilities described in this document.

The log file utility, described in Section 2, is applicable in connection with both DSS and DATANET 7100.

The dump utility described in Section 3, however, is only applicable to the DATANET 7100.

SECTION II

USE OF THE LOG FILE UTILITY

## INTRODUCTION

The Log File Editor produces reports on all or part of the contents of
the DSA log files stored on DPS7. The user may specify his report requi-
rements through the Options File input.

```
          Options File


          BRIEF
          CLASS  <item-class>
          FROM   <date><time>
          LL     <line-length>
          LVL    <minimum-priority-level>        Log File
          NN     <site>
          ORG    <item-origin>
          TO     <date><time>
          TYPE   <item-type>



                    IN                      D1


                    DSALOG          load module:
                    utility         H_FPPRJRNL


                        OT


                    log file
                    printout
```
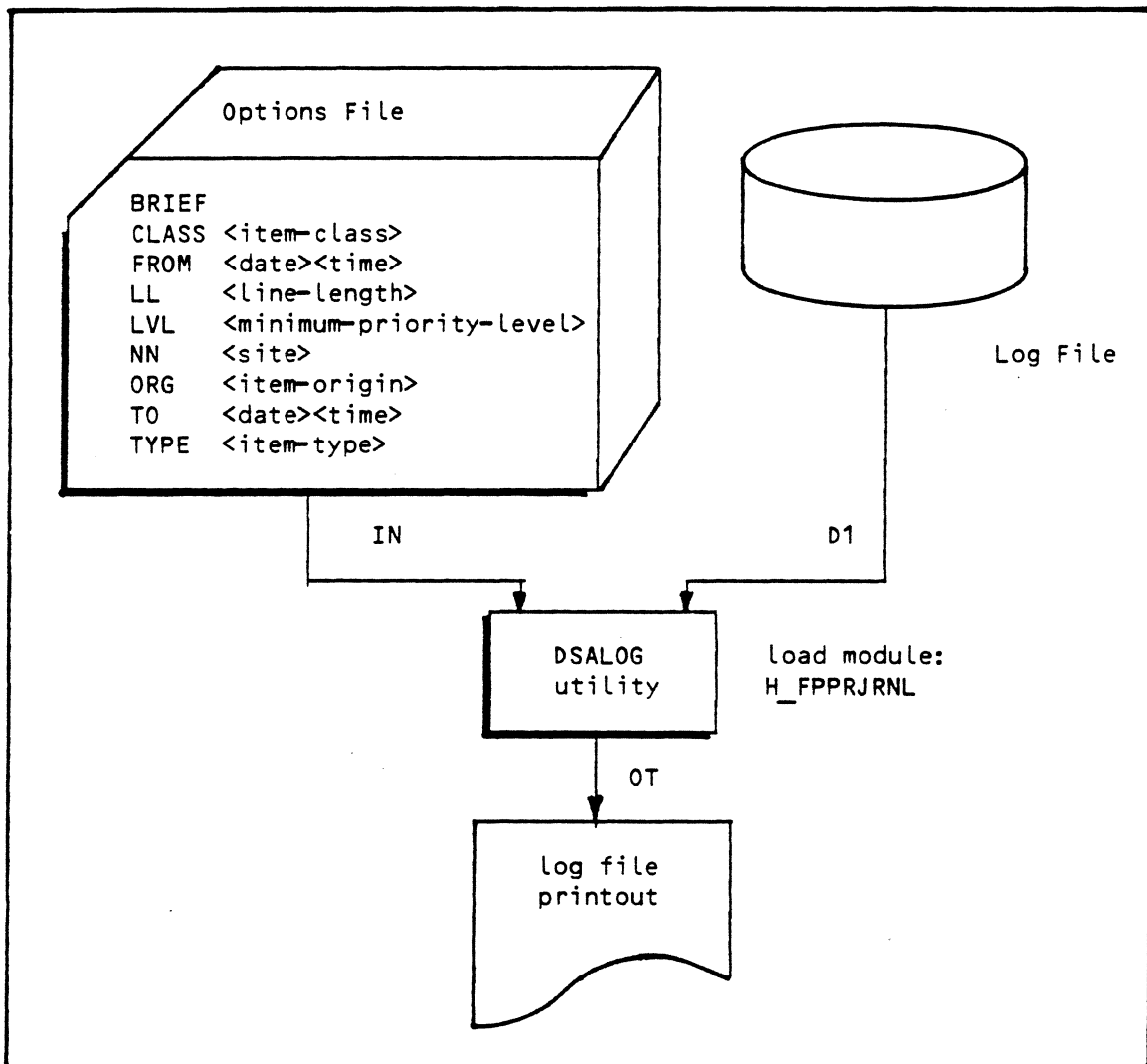
The Options File is optional and considered by the Log File Editor as a
character string. It consists of a series of options, separated from each
other by one or more space characters. There are two types of options:

● Formating options.

● Item selection options.

## FORMATING OPTIONS

BRIEF  Indicates that only control data should be reported.

LL     Gives the effective line length, which must be between 64 and
       132. The default value is 132.


## ITEM SELECTION OPTIONS (FILTERS)

Each option can only appear once. If several options are selected, they
are operated upon by a logical 'AND'.

FROM   Is used to enter the minimum date and time for selected log items
       to be included in the report. The values are entered in the
       YY:MM:DD and HH:MM:SS formats where the date and time entries are
       separated by one or more spaces. If no FROM option is specified,
       there is no 'early limit' for inclusion of log entries in the
       report.

NN     Gives the network address of a specific site. This address is given
       in the format:

           area address: node address within the area.

       The two addresses are two-digit decimal numbers (for example
       01:13). If this option is present, only the log items whose
       "responder node" correspond to this address will be included in
       the report.

TO     Gives the latest time and date for which log items will be included
       in the report. The values are provided in YY:MM:DD and HH:MM:SS
       formats, where their date and time entries are separated by one or
       more spaces. The date is optional when a FROM option has been
       selected; in this case the default value for TO is the FROM date.

TYPE   Specific to a particular log item type which is to be reported on.
       The different types available are as follows:

       AC-CTL   Administrative access rights check.

       AP-CTL   Commands and replies relating to the objects of an
                application

       AP-INFO  Solicited or unsolicited status or history information
                relating to the components of an application

       ND-CTL   Commands and replies relating to the objects of a specific
                node

       ND-HIST  Solicited or unsolicited history of the activity of an
                object of a specific node

       ND-STAT  Solicited or unsolicited status information relating to
                the objects of a specific node

       NW-CTL   Commands and replies relating to the network node as such

NW-ERR    Unsolicited error message

NW-EVENT  Unsolicited notification of an event

NW-HIST   Solicited or unsolicited history of the activity of a net-
          work element

NW-STAT   Solicited or unsolicited status information for a network
          element (generally, node status information)

NW-TEST   Commands, replies and tests concerned with network testing

NW-THRSH  Error threshold has been reached

XN-CTL    Control commands and replies for "cross net" operations

NOTE: The items conform to the Administrative Exchange Protocol
(AEP).

CLASS   Is used to enter a specific log item class. Only items belonging to
        the specified class will be included in the report. The different
        classes are as follows:

        AF      Network administrator management
        AUTO    Auto-event management (in a Node Administrator - NAD)
        CT      Controller management
        DAPC    Diagnostic application check
        DBUG    Software debugging check
        DV      Terminal management
        EX      Executive
        FLTR    Output filter management (in an NAD)
        INIT    Node start-up control
        LC      Logical connection management
        LL      Logical line management
        MB      Mailbox management
        NADC    Supplemental NAD check
        ND      Node verification
        NOIC    Network Operator Identity check
        NS      Network connection management
        NSFC    Network Administrator Storage Facility (NASF) check
        PA      Packet management (Datagram)
        PAPC    Package application check
        PL      Physical line management
        THRS    Error threshold reporting
        TS    - Transport station management
        UAPC    User application check
        VC      Virtual circuit management
        XNWC    Crossnet monitoring
        XNWT    Crossnet transfers

LVL     Is used to enter the minimum importance level, below which the item
        will not be included in the report. The level indicated must be an
        integer between 1 and 16 inclusive. The default value is 6.

ORG    Is used for entering a specific type of origin for a log item; only
       log items having this origin will be included in the report. The
       possible origins are as follows:

       AUTO  – Network Administrator (NAD) auto-event
       CLCK  – Time-base event in an NAD
       EXEC  – Node control program
       NASF  – Network Administrator Storage Facility (NASF)
       NCC   – Network Control Center
       OPER  – Operator
       UMP   – Unsolicited event in a Network ADministrator (NAD)
       XROM  – Crossnet Load/Dump


## Option Decoding Error Messages

| | |
|---|---|
| UNKNOWN KEYWORD | BAD LEVEL |
| DUPLICATE KEYWORD | NO VALUE FOR PARAMETER LEVEL |
| LINE LENGTH MISSING | BAD TYPE |
| BAD LINE LENGTH | NO VALUE FOR PARAMETER TYPE |
| DATE/TIME (FROM) MISSING | BAD CLASS |
| BAD DATE/TIME | NO VALUE FOR PARAMETER CLASS |
| TIME (FROM) MISSING | BAD ORIGIN |
| BAD TIME (FROM) | NO VALUE FOR PARAMETER ORIGIN |
| DATE/TIME (TO) MISSING | BAD SITE ID |
| BAD DATE/TIME (TO) | NO VALUE FOR PARAMETER NN |


## PRINTER REPORTS

The report as such is preceded by a listing of the options selected by
the user. The presentation format for the standard log items depends on
whether the BRIEF option has been requested. If the BRIEF option has been
requested, one line, which contains the control information, is printed
for each log item selected.

If the BRIEF option has not been requested, a group of lines is printed
out for each log item:

● The first line gives the control information.

● The second line gives information concerning command parameters.

● The third line (and subsequent lines, if required), gives information
  .concerning the reply.

## Format of the Control Information Line

This line is 64 characters long and has a fixed format:

- Type of software (3 characters hexadecimal):

  - Character 1: hardware type =

    | | |
    |---|---|
    | 0 | Unknown |
    | 1 | DN 7100 |
    | 2 | MINI 6 MOD 400/DSS |
    | 3 | DPS 7 host system |
    | 4 | DPS 8 host system. |

  - Characters 2 and 3: software release number.

- Identification of responder node (5 characters):

  - Characters 1 & 2: Area address
  - Character 3:       ":"
  - Characters 4 & 5: Node address within the area.

- Date and time (17 characters) format YY:MM:DD b HH:MM:SS

- Originator node identification (5 characters, same format as for the responder node)

- Type of origin (up to 4 characters, same format as for ORG in the options file)

- Origin (2 hexadecimal characters). The different possible values for ORG = are:

  | | | |
  |---|---|---|
  | 0 = NOI | Connection of an operator |
  | 1 = NCC | Connection of an operator or a utility |
  | 2 = XROM | The number of the link to the next node. |

- Type (8 characters, same format as for the TYPE option)

- Class (4 characters, same format as for the CLASS option)

- Code (2 hexadecimal characters), indicating the specific action to be performed, or the number of the message sent.

- Reply format (2 hexadecimal characters), in a bit pattern which indicates the type of reply. If the bit is set, the meaning is as follows; bit:

  | | |
  |---|---|
  | 0 | Rejected before processing |
  | 1 | Rejected during iteration |
  | 4 | Iteration not completed |
  | 5 | Rest of message to follow in another item. |

- The priority level (2 hexadecimal characters, if the option LVL has been used).

## Format of Command Data Line

```
CMD==> [FROM = aaaa] [TO = bbbb] [STATE = cccc] [xx.xxxxx...]
```

## Format of the Response Data

The first 8 characters of the first line contain the character string
"RSP==>bb". The parameter values are printed out one after another, sepa-
rated by spaces. The keywords are not printed out (see - Interpretation
of Response Line).

## INVOKING THE UTILITY

Load module name: H_FPPRJRNL

Option file characteristics: card file, internal file name: IN, optional,
may be an input enclosure, may be parameterized.

Log file characteristics: any file accessible in sequential mode and
containing AEP records, maximum record length: 278 bytes, variable
length, internal file name: D1.

Report file characteristics: sequential file, internal file name: OT.
This file is generally redirected to the Output Writer with the JCL com-
mand SYSOUT.

The name of the files used to store the log records is SYS.DSALOGn, where
"n" is an integer value of from 1 through 9. For reasons of compatibility
with previous releases, the library SYS.FPJRNL may be used for storing
log records in members JRNL1 and JRNL2.

The job stored could be the following:

```
$JOB job-name USER = user-name;
VALUES 1;
$STEP H_FPPRJRNL SYS.HLMLIB DUMP = DATA;
$ASSIGN D1, SYS.DSALOG&1;
$SYSOUT OT;
$ENDSTEP;
$ENDJOB;
```

... Where:

job-name  Is the user-defined job name

user-name Is the name applicable to the user concerned, as defined in the
          SITE.CATALOG.

No options will be active for the editor, and all records will be listed
in detail. It should be noted that the following standard jobs are loca-
ted in the library SYS.HSLLIB:

● DSALOG, for printing the log file's contents

● DSADUMP, for printing contents of the dump file.

Printing the log files may require some precautions, if these files are concurrently used by the LOG ASF system. GCOS 7's Log ASF stores log records in a set of 1 to 9 files managed in a circular way. It is therefore recommended that the user assign these files in the following manner:

```
VL 1;
STEP ... ;
...
ASSIGN D1, SYS.DSALOG&1, SHARE = ONEWRITE, ACCESS = READ;
...
ENDSTEP;
```

This also allows the contents of the currently active log file to be printed.

In order to print Log ASF as soon as they are full, good practice is to use the automatic job spawning facility at Log ASF switching. At switching time, the DSALOG job (stored in the SYS.HSLLIB library) is launched automatically using the previous file name as a parameter; i.e., DSALOGi, if switching has occurred between the files SYS.DSALOGi and SYS.DSALOGi+1.

Example of DSALOG JCL:

```
STEP    H_FPPRJRNL, SYS.HLMLIB, DUMP= DATA;
ASSIGN  D1, SYS.&1, ...;
SYSOUT  OT,...;
ENDSTEP;
```

Note that, for reasons of compatibility with previous releases, the ASF LOG system also supports the SYS.FPJRNL library's subfiles JRNL1 and JRNL2. For these, the ASSIGN should be in the following form:

```
ASSIGN D1, SYS.FPJRNL, SUBFILE = JRNL&1;
```

However, since any given subfile may not be read while being written to, the log file utility may never be run on the subfile currently active. On the other hand, the log handler will be aborted if it attempts either to start on or to switch to a subfile already assigned in read mode (by the Log File utility).

Example: Log File Editor Output
===

```
*** LOG FILE EDITOR version_# date ***      80/09/24 11HH11MN44SS
    *** PARAMETERS LIST ***
FROM 01:01:01  00:41:01
 TO  00:41:32
*** NO ERROR DETECTED ***
*** LOG FILE EDITOR V03.00 80/09/01 ***   80/09/24 11HH11MN44SS
    *** LOG FILE LIST ***
100 01:05             00:41:01 01:05 UMP  00 NW-ERROR PL  01 00 10
RSP==>  HDC2
100 01:05             00:41:01 01:05 UMP  00 ND-HIST  PL  0D 00 0A
RSP==>  HDC2 0 1 0 2 0 0
100 01:05             00:41:04 01:05 UMP  00 NW-EVENT PL  02 00 0A
RSP==>  HDC2
100 01:05             00:41:15 01:05 OPER 01 ND-STAT  LL  03 08 02
CMD==>  DA PL
RSP==>  HDL4 HDLC ENBL PL:HDC4   OFF
        HDL2 HDLC ENBL PL:HDC2   OFF
        LLS1 SYN  USED PL:PLS1   OFF
        LLS2 SYN  ENBL PL:PLS2   OFF
        LLA1 ASY  USED PL:PLA1   OFF
        LLA2 ASY  ENBL PL:PLA2   OFF
100 01:05             00:41:15 01:05 OPER 01 ND-STAT  LL  03 08 02
CMD==>  DA PL
RSP==>  HDL4 HDLC ENBL PL:HDC4   OFF
        HDL2 HDLC ENBL PL:HDC2   OFF
        LLS1 SYN  USED PL:PLS1   OFF
        LLS2 SYN  ENBL PL:PLS2   OFF
        LLA1 ASY  USED PL:PLA1   OFF
        LLA2 ASY  ENBL PL:PLA2   OFF
100 01:05             00:41:16 01:05 UMP  00 ND-HIST  PL  0D 00 0A
RSP==>  PLA1 0 32 0 1344 0 0
100 01:05             00:41:30 01:05 UMP  00 NW-EVENT PL  01 00 0A
RSP==>  HDC2
100 01:05             00:41:30 01:05 UMP  00 NW-ERROR PL  01 00 10
RSP==>  HDC2
100 01:05             00:41:31 01:05 UMP  00 NW-ERROR PL  01 00 10
RSP==>  HDC2
100 01:05             00:41:32 01:05 UMP  00 ND-HIST  PL  0D 00 0A
RSP==>  HDC2 0 1 0 2 0 0
READ =    000000164
LISTED=   000000010
```

... Where:

DA        Is the command for "Display Attributes" for the DN7100

version_# Is the release number of the utility

date      Is the date on which the utility was created.

## INTERPRETATION OF THE RESPONSE LINE

Appendix A gives information to assist in interpretation of the output from the Log File Editor utility, which consists of two types of page:

- A summary of the possible records within a set

- A breakdown of each record indicated in the summary.


## Summary Sheets

MESSAGE MANAGEMENT

| TYPE | CLASS | CODE | IMP. LEVEL | MESSAGE |
|------|-------|------|------------|---------|
| 13 | 12 | 1 | 10 | Logical Connection Open |
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |

## Type

The type of record corresponds to the meaning indicated in Table 2-1.

Table 2-1. AEP Types

| Type | Meaning |
|------|---------|
| 1 | Network test and debug operations |
| 2 | Network controlling |
| 3 | Network status |
| 4 | Network history |
| 5 | Node test and debug operations |
| 6 | Node controlling |
| 7 | Node status |
| 8 | Node history |
| 9 | Application controlling |
| 10 | Application statistics |
| 11 | Error reports |
| 12 | Threshold warning reports |
| 13 | Event announcements and reports |
| 14 | Control of crossnet operations |
| 15 | Administrative access rights control. |

## Class

The class of record corresponds to the meaning indicated in Table 2-2.

Table 2-2. AEP Classes

| Class | Meaning |
|-------|---------|
| 1 | Crossnet monitoring |
| 2 | Crossnet transfers |
| 3 | Node start-up control |
| 4 | Physical line management |
| 5 | Logical line management |
| 6 | Network connection management |
| 7 | Datagram packet management |
| 8 | Virtual circuit management |
| 9 | Transport level |
| 10 | Workstation management |
| 11 | Mailbox management |
| 12 | Logical connection management |
| 13 | Controller management |
| 14 | Terminal device management |
| 15 | Administrative function management |
| 16 | Software debug control |
| 17 | Data storage management |
| 18 | Time management |
| 19 | Executive management |
| 32 | Periodic response management (in NAD) |
| 33 | Auto-event management (in NAD) |
| 34 | Output filter management (in NAD) |
| 35 | Threshold management |
| 36 | Additional control of NAD itself |
| 37 | Control of node |
| 48 | NOI control |
| 49 | NASF control |
| 50 | NAUs control |
| 51 | Diagnostic application control |
| 52 | Packaged application control |
| 53 | User application control |

## Code

The code applied to each message is a reference to the message within the set. This code is not necessarily unique within the set.

## Importance Level

This is predetermined and is checked against the LVL parameter set in the AF command before being transmitted to the log file.

## Breakdown Sheets

The heading of each sheet contains the following information:

FUNCTION:        (e.g., MESSAGE MANAGEMENT)

MESSAGE:        (e.g., LOGICAL CONNECTION OPEN)

TYPE

CLASS          The parameters of the message as
               shown on the summary sheet and
               to be found in the control information
CODE           line of the printed output.

IMPORTANCE
LEVEL

MODE 3 (HEXA)    (e.g., 08 | 33  6838  B300)

This figure represents          Each character indicates the
the (hexadecimal)               format in which the respective
number of fields in             field is to be printed.
the response line               See Table 2-3.

The body of each sheet contains a breakdown of the response for
each message.

| FORMAT | LENGTH (BYTES) | PARAMETER |
|--------|----------------|-----------|
| 3 | 2 | Initiator flag = 0 : initiator |
| 3 | 2 | ID of initiating node |
| | | Significance of field. |
| | Number of bytes reserved for field | |

Used by system to determine print
format of field.

When the content of each record is printed the parameters are printed
sequentially without keyword introductions. Missing parameters are
replaced by a '*' character. These sheets indicate the order in which
the parameters are printed.

Table 2-3. Log File Editor Print Formats

| Format | Description |
|--------|-------------|
| 0 | Defined field not present in response. |
| 1 | 2 byte character string. This string may contain numbers, letters or blanks in either ASCII or EBCDIC codes. |
| 2 | 4 byte character string. This string may contain numbers, letters or blanks in either ASCII or EBCDIC codes. |
| 3 | 16 bit unsigned integer. |
| 4 | 32 bit unsigned integer. |
| 5 | 16 bit hexadecimal value. |
| 6 | 32 bit hexadecimal value. |
| 7 | 32 bit date/time or period of time. Date/time is recorded as elapsed seconds since 1st January 1901 with a normal output format of:<br><br>YY:MM:DD HH:MM:SS<br><br>In the case of two outputs referring to the same date, the second output format may be shortened to:<br><br>HH:MM:SS<br><br>This second format can also be used to express periods of time. |
| 8 | Variable length character string. The associated parameter field has the following format:<br><br>`<----HEADER---->` `<----CHARACTER STRING--- - --->`<br>`    (16 bits)` `        (variable)`<br><br>`F     SIZE`<br><br>F =    Code bit (0 = ASCII or 1 = EBCDIC)<br>SIZE = Number of characters |

Table 2-3 (cont). Log File Editor Print Formats

| Format | Description |
|---|---|
| 9 | Variable length hexadecimal string. The associated parameter field has the following format: |

```
<----HEADER----> | <---HEXADECIMAL BYTE STRING--- - -->
    (16 bits)                    (variable)

       SIZE
```

| Format | Description |
|---|---|
| | SIZE = Number of hexadecimal bytes |
| 10 (A) | 16 bit object state value. The relationship between the stored value and the output is as follows: |

```
x'100' - SPAR
x'200' - DOWN
x'300' - DSBL
x'400' - LOCK
x'500' - TEST
x'600' - ENBL
x'700' - USED
```

| Format | Description |
|---|---|
| 11 (B) | 16 bit error status for item. The contents of the associated parameter is ignored if zero (good status) and the next field processed. If the contents of the associated parameter is not zero the current item is terminated and the value is output decimal with the prefix ERROR = |
| 12 (C) | Full object name. This is a 6 byte character string aligned a 16 bit word boundary. It will be output as the first 2 characters, a colon and the remaining 4 characters. |
| 13 (D) | TBD |

Table 2-3 (iii). Log File Editor Print Formats

| Format | Description |
|--------|-------------|
| 14<br>(E) | Variable length decimal string defining a call number, a subcription number,... The associated parameter field has the following format:<br><br>```
┌─────────┬──────────────────────────── ─ ──────┐
│<HEADER> │ <──────DECIMAL STRING─────── ─ ──────> │
│(8 bits) │         (variable)                     │
│         │                                        │
│SIZE     │                              ─         │
└─────────┴──────────────────────────── ─ ──────┘
```<br><br>SIZE = number of 4 bit decimal characters in following string.<br><br>Field length = HEADER + [SIZE x 4] bits + [FILLER]<br>FILLER =        0,4,8 or 12 bits to next 16 bit word boundary. |
| 15<br>(F) | Escape to next 4 bit field and add 16 to value. There is no parameter field associated with this mode 3 field. |

# SECTION III

## USE OF THE DN 7100 DUMP UTILITY

### PURPOSE

The dump editor is designed to print a DN 7100 memory image stored in a DPS7 file, giving a basic print out with a few options (specification of a range of addresses) and produces a hexadecimal interpretation as well as an ASCII and/or EBCDIC translation of the contents of memory. It does not provide an interpretation related to the DN 7100 software logic.

### FILES USED

Three files are used, one of them being optional:

1. The file containing the image to be printed, with the internal file name D1, must be accessible in standard sequential mode and is usually a direct subfile of the library SYS.FPDUMP where the ADM system module stores dumps when taken (under the name fsys1 or fsys2, where "fsys" is the name of the front-end system concerned).

2. The optional file containing the particular options chosen for this treatment. If not present, all the default options will be applied. Its internal file name is IN, and it should be in card format. Only the first record if present will be analysed. This file could be an input enclosure, and the options may be parameterized with parameter values provided at job submission time.

3. The report file, with the internal file name OT, is most commonly directed towards the Output Writer (with the JCL command SYSOUT).

## REPORT PARAMETERS

The options are read on IN file (one card only).

The general format is either:

● keyword    value

● keyword

At least one space is used as a separator, and is mandatory between a keyword and the associated value, or between one keyword and the next. The keywords can be presented in any order. There are default values for each option.

1. FROM option

   This keyword must be followed by a string of up to 8 hexadecimal characters (0 to 9, A to F). This string represents the address of the first word of DN 7100 memory (sixteen-bit words) to be included in the dump. The default value is 0.

2. TO option

   This keyword must be followed by a string of 1 up to 8 hexadecimal characters (0 to 9, A to F). This string represents the address of the last word of DN 7100 memory to be included in the dump. The default value is the maximum allowed: FFFFFFFF.

3. ASCII option

   This is a keyword without an associated value. Its presence requests ASCII interpretation of memory content. Hexadecimal interpretation is always provided. If no specific interpretation is requested (neither ASCII, nor EBCDIC) ASCII interpretation is provided.

4. EBCDIC option

   This is a keyword without an associated value. Its presence requests EBCDIC interpretation of memory contents. Hexadecimal interpretation is always provided. If both ASCII and EBCDIC are requested, both are provided; but a reduced number of addresses are consequently printed on each line of output.

5. LL

   This keyword enters the logical line length to be used for the dump print out. It must be followed by a string of 2 to 3 decimal characters representing the logical length, in bytes, of the printed line.

The general formats are as follows:

```
    ADDR                                              ASCII
 12345678  1111   2222  3333   4444                   .."33DD
```

I.e.:

- 8 character field for location. The address is expressed as a right-justified hexadecimal value with blanks replacing leading zeroes.

- n groups of four hexadecimal characters, each group being separated. from the next by a space

- 2n characters representing the ASCII interpretation of the line.

If only EBCDIC interpretation is requested, the format is the same, but with provision, of course, of EBCDIC instead of ASCII interpretation.

If both ASCII and EBCDIC options are specified, the format is:

```
    ADDR                             ASCII         EBCDIC
 12345678  1111  2222  3333   4444   .."" 33 DD    ........
```

I.e., address field:

- n groups of 4 hexadecimal characters.

- 2 n characters representing the ASCII interpretation

- 2 n characters representing the EBCDIC interpretation. See later in this manual for further explanations of the interpretations provided).

Depending on the format used, the respective lengths are either:

- 12 + 5n + 3 + 2n (i.e., 15 + 7n, if one interpretation)

- 12 + 5n + 3 + 2n + 4 + 2n (i.e., 19 + 9n, if two interpretations)

If it is chosen to print 1, 2, 4, 8 or 16 DN 7100 words on the same line, the following array gives the thresholds applicable:

| n | 1 | 2 | 4 | 8 | 16 |
|---|---|---|---|---|---|
| LL if one option | 22 | 29 | 43 | 71 | 127 |
| LL if both options | 28 | 37 | 55 | 91 | |

Then the parameter provided with the LL value will act upon the number of words printed on the same line, with the program choosing a value in the array just less than the option. The value provided must be between 22 and 132, with a default of 132 (i.e., the maximum allowed).

Example of options:

    FROM    A21F    TO    3EC47    ASCII

If no options are provided (i.e., blank card on IN, or IN file empty, or
IN file missing) the job will be the result of all the default options;
that is:

    FROM    0    TO    FFFFFFFF    ASCII    LL    132


## OPTION ANALYSIS AND ERROR MESSAGES

1. Double occurrence of an option:

   If an option without an associated value (in ASCII or EBCDIC) is
   present twice, a warning message is issued and the option is taken in-
   to account.

   If an option with an associated value is present twice (FROM, TO, LL)
   a warning message is issued, and the next parameter is skipped
   (because it is suspected to be a value), and the first value
   associated with the keyword is used.


2. Unrecognized keyword:

   An unrecognized keyword is skipped and a warning message is issued.
   For example a keyword not terminated by a space is not recognized, and
   the string is skipped until either a blank or the end of the card.


3. Erroneous string for a value:

   An erroneous hexadecimal character (i.e., FROM or TO) or decimal
   character (i.e., LL) string is flagged and the whole value is ignored.


4. List of error messages issued during option analysis:

       UNEXPECTED END OF OPTIONS

       SYNTAX ERROR UNKNOWN KEYWORD

       SECOND VALUE FOR PARAMETER FROM IGNORED

       SECOND VALUE FOR PARAMETER TO IGNORED

       SECOND VALUE FOR PARAMETER LL IGNORED

       TOO LONG STRING FOR LL VALUE OPTION IGNORED

       SECOND OCCURRENCE OF ASCII KEYWORD

       SECOND OCCURRENCE OF EBCDIC KEYWORD

TOO LONG VALUE

TOO LONG KEYWORD

VALUE IS NOT DECIMAL

VALUE IS NOT HEXADECIMAL

TOO SMALL VALUE FOR LL PARAMETER JOB ABANDONED

TOO LARGE VALUE FOR LL PARAMETER, MAX ASSUMED

NEITHER ASCII NOR EBCDIC OPTION, ASCII ASSUMED

OVERLAPPING BETWEEN TO AND FROM VALUES, JOB ABANDONED


## REPORT PRODUCTION

Any file error occurring during processing except absence of the options
file IN, is not handled by the program; this will lead to an abort (e.g.,
file code unknown, bad treatment mode, bad file organization or block
length).

The file containing the DN 7100 memory image should be divided into
logical segments. These segments are consecutive, each containing a DN
7100 address and a word count. The addresses in consecutive segments must
be in ascending order. Therefore, if the user assigns a file which is not
a DN 7100 memory image, or if the file was not properly created, the fol-
lowing message will be issued:

OVERLAPPING OF DUMP SEGMENTS, JOB ABANDONED


If the FROM option value is less than the first address in the file, or
if a gap exists between two logical segments, the following line is
printed:

ABCD    ==== GAP    ... where ABCD is the address requested.


If two or more lines are identical, only one is printed:

EF01    ==== SAME    ... where EF01 is the starting address of the last
                         identical line.


## Running of the Job — The JCL Required for Batch Mode

The utility is generally launched directly on the files built by the ADM
Dump modules. These files are subfiles of the SYS.FPDUMP library. The ADM
Dump modules keep track of 2 dumps per front-end processor connected;
under the names fsys1 and fsys2, where "fsys" is the name of the front-
end processor concerned. When a dump is taken, it is written to the ol-
dest of the two subfiles applicable.

The internal file number D1 must be assigned to the chosen file.

If the user wishes to override the default options, he should assign a
card file to IN. The job could be the following:

```
$JOB job_name, USER = user_name;
$STEP H_FPPRDUMP, (SYS.HLMLIB);
$ASSIGN D1, SYS.FPDUMP, SUBFILE = DN201;
$SYSOUT OT;
$ENDSTEP;
$ENDJOB;
```

... Where:

job-name   Is the user-defined job name

user-name  Is the name applicable to the user concerned, as defined in the
           SITE.CATALOG.


The memory image stored in DN201 will then be printed with application
of all the default options; i.e., printing of the whole file with ASCII
interpretation. With his next job, the user might choose specific
options:

```
$JOB job_name, USER = user_name;
$STEP H_FPPRDUMP, (SYS.HLMLIB);
$ASSIGN D1, SYS.FPDUMP, SUBFILE = DN202;
$SYSOUT OT;
$ASSIGN IN, * OPT;
$ENDSTEP;
$INPUT OPT;
FROM 2ACB ASCII TO 1FE43 EBCDIC
$ENDINPUT;
$ENDJOB;
```

... Where the JOB statement parameters are as for the example at the top
of this page. Here, the memory will be printed from address 2ACB through
1FE43, with both ASCII and EBCDIC interpretations.


## Running of the Job by the System Operator

The job may be catalogued in the library SYS.HSLLIB, with the member
name FPPRDUMP for example (i.e., the name under which the job was
stored). Then the job may be invoked by the system operator, with the GCL
command EJR:

```
EJR MEMBERS=FPPRDUMP LIB=SYS.HSLLIB ;
```

... Either with the catalogued parameters, or with explicit values.

## JCL Requirement Under IOF

The user may catalogue a job with:

- Parameter values associated with name of the subfile and treatment options

- Choosing default options at storage time. At job submission time, he will be able to override these parameters.


EXAMPLE

The job catalogued might be:

```
$JOB job_name, USER = user_name;
$VALUES DN201, 0, FFFFFF, 'ASCII EBCDIC';
$STEP H_FPPRDUMP, (SYS.HLMLIB);
$ASSIGN D1, SYS.FPDUMP, SUBFILE = &1;
$SYSOUT OT;
$ASSIGN IN, * PARAM;
$ENDSTEP;
$INPUT PARAM, JVALUES;
FROM &2 TO &3 &4
$ENDINPUT;
$ENDJOB;
```

    ... Where:

job-name  Is the user-defined job name

user-name Is the name applicable to the user concerned, as defined in the
       SITE.CATALOG.


Then a submission without parameters will provide printing of the comple-
te subfile DN201 with both ASCII and EBCDIC interpretation. A submission
with appropriate parameters, for example:

   EJR .., VALUES = (DN202, 10000, , EBCDIC);

... Will provide printing of subfile DN202 from address 10000 to the end
but with EBCDIC interpretation only.

## PRINTING OF SPECIAL CHARACTERS

This section applies to ASCII and EBCDIC interpretations. The main rule
is that numbers and letters are correctly printed. Lower-case letters, if
any, are changed to upper case letters. Special characters approximately,
usually the same as is printed by the GCOS utilities. Hence:

```
space                        (ASCII 20, EBCDIC 40)
quote                "       (ASCII 22, EBCDIC 7F)
number               #       (ASCII 23, EBCDIC 7B)
dollar               $       (ASCII 24, EBCDIC 5B)
percent              %       (ASCII 25, EBCDIC 6C)
ampersand            &       (ASCII 26, EBCDIC 50)
left parenthesis     (       (ASCII 28, EBCDIC 4D)
right parenthesis    )       (ASCII 29, EBCDIC 5D)
asterisk             *       (ASCII 2A, EBCDIC 5C)
plus                 +       (ASCII 2B, EBCDIC 4E)
comma                ,       (ASCII 2C, EBCDIC 6B)
minus or hyphen      -       (ASCII 2D, EBCDIC 60)
period               .       (ASCII 2E, EBCDIC 4B)
slash                /       (ASCII 2F, EBCDIC 61)
colon                :       (ASCII 3A, EBCDIC 7A)
semicolon            ;       (ASCII 3B, EBCDIC 5E)
less-than            <       (ASCII 3C, EBCDIC 4C)
equal to             =       (ASCII 3D, EBCDIC 7E)
greater than         >       (ASCII 3E, EBCDIC 6E)
question mark        ?       (ASCII 3F, EBCDIC 6F)
underscore           _       (ASCII 5F, EBCDIC 6D)
```

... Are correctly printed. However:

```
exclamation mark   !    (ASCII 21, EBCDIC 4F)   is replaced by |
                                                (vertical bar)
acute accent       '    (ASCII 27, EBCDIC 7D)   is replaced by '
                                                apostrophe
circumflex         ^    (ASCII 5E, EBCDIC 5F)   is replaced by
                                                (logical not)
grave accent       `    (ASCII 60, EBCDIC 79)   is replaced by @
                                                (commercial 'at')
opening brace      {    (ASCII 7B, EBCDIC C0) )
closing brace      }    (ASCII 7D, EBCDIC D0) |
left bracket       [    (ASCII 5B, EBCDIC 4A) } are replaced by @
right bracket      ]    (ASCII 5D, EBCDIC 5A) | (commercial 'at')
tilde              ~    I 7E, EBCDIC A1)       )
```

Any current character which is not printable, is edited as a period ".".

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ASCII | |
| 0 | | | SP | 0 | @ | P | ` | p |
| 1 | | | ! | 1 | A | Q | a | q |
| 2 | | | " | 2 | B | R | b | r |
| 3 | | | # | 3 | C | S | c | s |
| 4 | | | $ | 4 | D | T | d | t |
| 5 | | | % | 5 | E | U | e | u |
| 6 | | | & | 6 | F | V | f | v |
| 7 | | | ' | 7 | G | W | g | w |
| 8 | | | ( | 8 | H | X | h | x |
| 9 | | | ) | 9 | I | Y | i | y |
| A | | | * | : | J | Z | j | z |
| B | | | + | ; | K | [ | k | { |
| C | | | , | < | L | \ | l | | |
| D | | | - | = | M | ] | m | } |
| E | | | . | > | N | ^ | n | ~ |
| F | | | / | ? | O | _ | o | |

SP   Space
`   Quote grave accent
'   Apostrophe, acute accent
/   Slash
!   Exclamation mark
,   Comma
-   Minus hyphen

^   Circumflex
_   Underscore
{   Opening brace
}   Closing brace
|   Vertical line
~   Tilde

{, }, [, ], ~   replaced by a @
  replaced by a ¬
` (grave accent) replaced by a @

| EBCDIC | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
| 0 | | | | | SP | & | - | | | | | | { | } | \ | 0 |
| 1 | | | | | | | / | | a | j | ~ | | A | J | | 1 |
| 2 | | | | | | | | | b | k | s | | B | K | S | 2 |
| 3 | | | | | | | | | c | l | t | | C | L | T | 3 |
| 4 | | | | | | | | | d | m | u | | D | M | U | 4 |
| 5 | | | | | | | | | e | n | v | | E | N | V | 5 |
| 6 | | | | | | | | | f | o | w | | F | O | W | 6 |
| 7 | | | | | | | | | g | p | x | | G | P | X | 7 |
| 8 | | | | | | | | | h | q | y | | H | Q | Y | 8 |
| 9 | | | | | | | | ` | i | r | z | | I | R | Z | 9 |
| A | | | | | [ | ] | | | : | | | | | | | |
| B | | | | | . | $ | , | # | | | | | | | | |
| C | | | | | < | * | % | @ | | | | | | | | |
| D | | | | | ( | ) | _ | ' | | | | | | | | |
| E | | | | | + | ; | > | = | | | | | | | | |
| F | | | | | ! | ^ | ? | " | | | | | | | | |

SP  Space  
-   Minus  
,   Comma  

‾   Underscore  
'   Apostrophe  

{, }, [, ], ~    replaced by @

^    replaced by ¬

` (grave accent) replaced by @

3-10

APPENDIX A

LOG FILE LIST EXAMPLE

An explanation of the information in this appendix will be found in
Section II.


EXAMPLE LISTING

*** LOG FILE EDITOR V03.00 80/09/01 ***    83/01/20 07HH59MN01SS

    *** LOG FILE LIST ***

013 01:34 01:01:02 04:18:51 01:34 UMP  00 NW-EVENT VC   04 00 06
RSP==>  DG6X XP68 1003 0900

013 01:34 01:01:02 04:18:51 01:34 UMP  00 NW-EVENT VC   01 00 06
RSP==>  DG6L DNLV 100A 00 0 00 C4201111101030122

013 01:34 01:01:02 04:19:00 01:34 UMP  00 NW-EVENT **** 01 00 06
RSP==>  120 4 596 594 600 29752 30352

013 01:34 01:01:02 04:19:02 01:34 UMP  00 NW-EVENT VC   07 00 06
RSP==>  DNLV 1001 0 0 0090

013 01:34 01:01:02 04:19:02 01:34 UMP  00 NW-EVENT VC   07 00 06
RSP==>  DNLV 1001 0 0 0090

013 01:34 01:01:02 04:19:03 01:34 UMP  00 NW-EVENT VC   07 00 06
RSP==>  DNLV 1001 0 0 0090

013 01:34 01:01:02 04:19:18 01:34 UMP  00 ND-HIST  PL   0D 00 0A
RSP==>  PLS4 0 14 0 14 0 0

013 01:34 01:01:02 04:19:20 01:34 UMP  00 ND-HIST  PL   0D 00 0A
RSP==> 3900 0 7 0 7 0 0

013 01:34 01:01:02 04:19:22 01:34 UMP  00 ND-HIST  PL   0D 00 0A
RSP==> 3880 0 7 0 7 0 0

013 01:34 01:01:02 04:19:24 01:34 UMP  00 ND-HIST  PL   0D 00 0A
RSP==> 3800 0 8 0 8 0 0

013 01:34 01:01:02 04:19:26 01:34 UMP  00 ND-HIST  PL   0D 00 0A
RSP==> 3180 0 8 0 8 0 0

013 01:34 01:01:02 04:19:20 01:34 UMP  00 ND-HIST  PL   0D 00 0A
RSP==> 3900 0 7 0 7 0 0

013 01:34 01:01:02 04:19:28 01:34 UMP  00 ND-HIST  PL   0D 00 0A
RSP==> 3100 0 7 0 7 0 0

013 01:34 01:01:02 04:19:30 01:34 UMP  00 ND-HIST  PL   0D 00 DA
RSP==> 3080 0 7 0 7 0 0

    ...
    ...

RECORD EXPANSION LINE 1

```
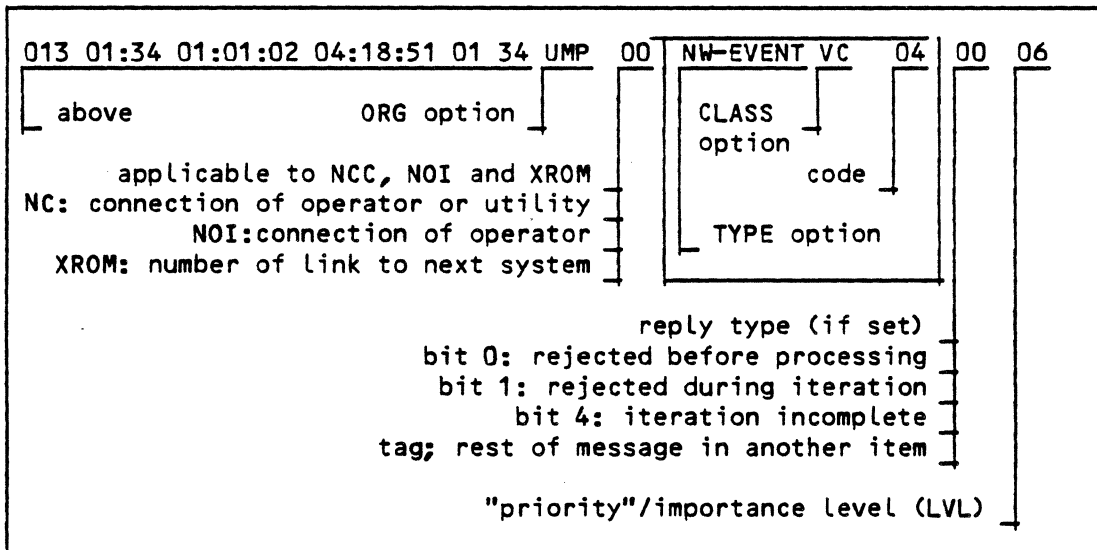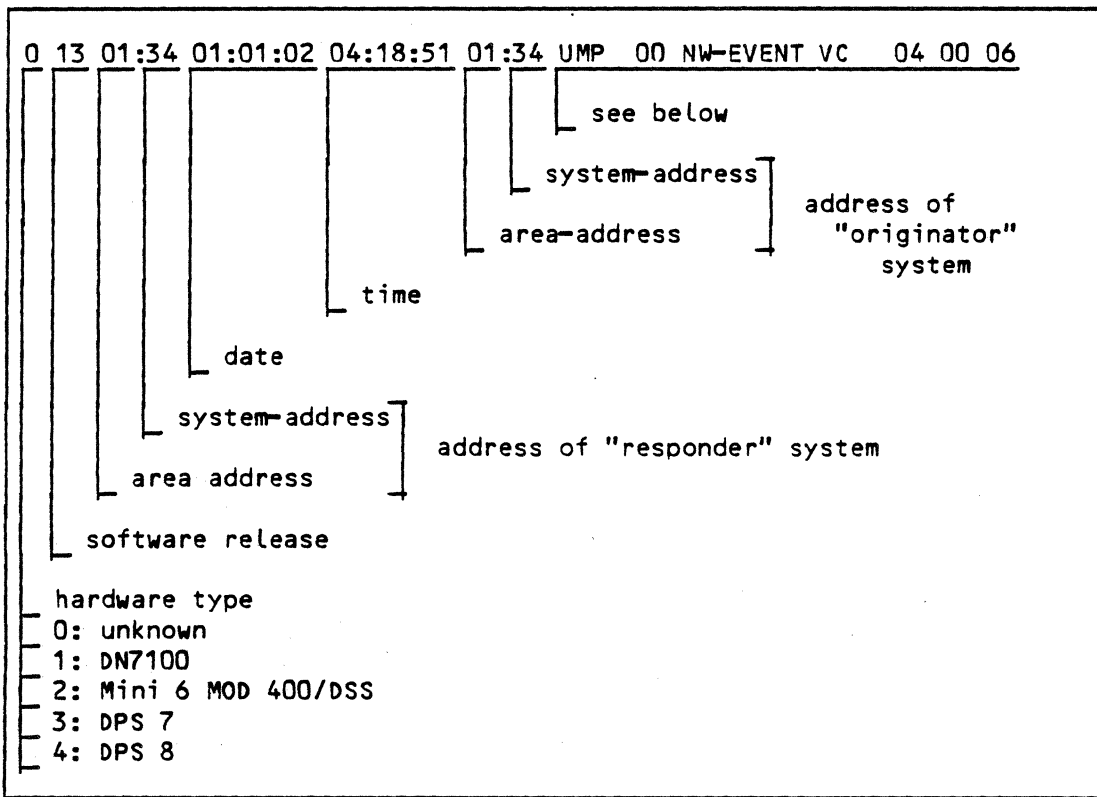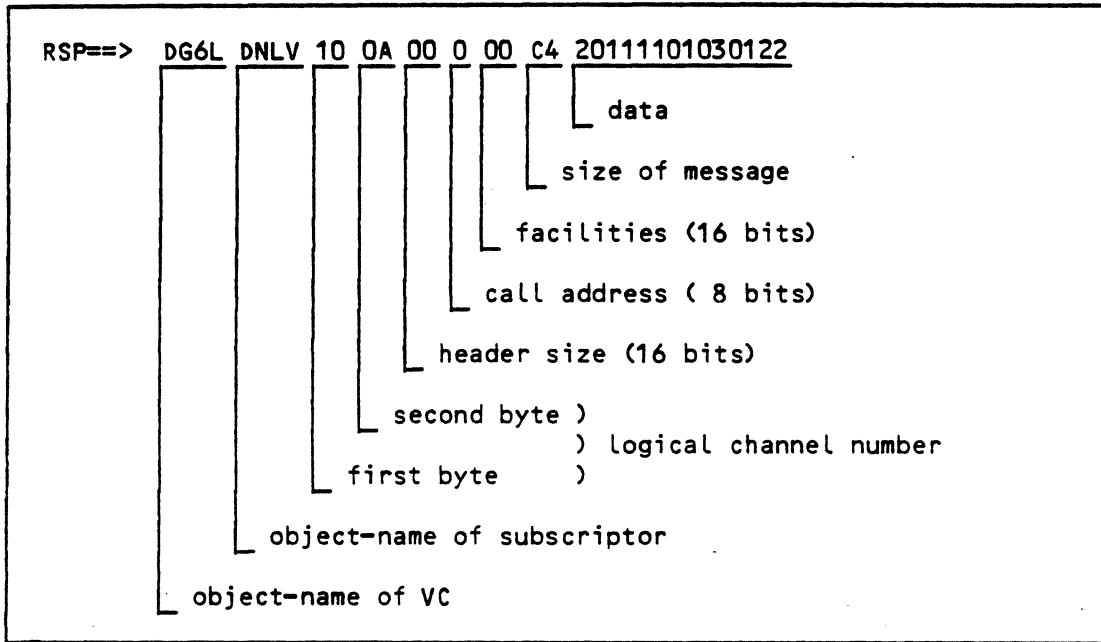013 01:34 01:01:02 04:18:51 01:34 UMP   00 NW-EVENT VC   04 00 06
RSP==>  DG6X XP68 1003 0900
```

```
0 13 01:34 01:01:02 04:18:51 01:34 UMP   00 NW-EVENT VC   04 00 06
                                   |              |__ see below
                                   |
                                   |          system-address ]
                                   |_ area-address          ]  address of
                                                                "originator"
                                                                system
                          |_ time
                    |_ date
            |_ system-address ]
          |_ area address     ]  address of "responder" system
        |_ software release
    |_ hardware type
    [ 0: unknown
    [ 1: DN7100
    [ 2: Mini 6 MOD 400/DSS
    [ 3: DPS 7
    [ 4: DPS 8
```

```
013 01:34 01:01:02 04:18:51 01 34 UMP   00 | NW-EVENT VC   04 | 00 06
|_ above              ORG option  _|       |  CLASS  _|         |
                                           |  option            |
        applicable to NCC, NOI and XROM _] |            code _] |
   NC: connection of operator or utility ] |                    |
            NOI:connection of operator   ] |  |_ TYPE option     |
    XROM: number of link to next system  ] |_____|

                              reply type (if set) _|
            bit 0: rejected before processing ]
            bit 1: rejected during iteration  ]
              bit 4: iteration incomplete     ]
        tag; rest of message in another item  ]
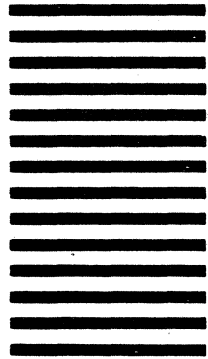
               "priority"/importance level (LVL) _]
```

A-02

RECORD EXPANSION LINE 2

```
013 01:34 01:01:02 04:18:51 01:34 UMP  00 NW-EVENT VC   01 00 06
RSP==>  DG6L DNLV 100A 00 0 00 C420111101030122
```

```
┌─────────────────────────────────────────────────────────────────┐
│                                                                   │
│  RSP==>  DG6L DNLV 10 0A 00 0 00 C4 20111101030122                │
│            │    │   │  │  │  │  │  │  └── data                     │
│            │    │   │  │  │  │  │  └──── size of message           │
│            │    │   │  │  │  │  └─────── facilities (16 bits)      │
│            │    │   │  │  │  └────────── call address ( 8 bits)    │
│            │    │   │  │  └───────────── header size (16 bits)     │
│            │    │   │  └────── second byte )                       │
│            │    │   │                     ) logical channel number │
│            │    │   └──────── first byte  )                        │
│            │    └────────── object-name of subscriptor            │
│            └────────── object-name of VC                           │
│                                                                   │
└─────────────────────────────────────────────────────────────────┘
```

TITLE

DPS 7
NETWORK ADMINISTRATION UTILITIES
USER'S GUIDE

ORDER NO. 10UC-00

DATED AUGUST 1985

**ERRORS IN PUBLICATION**

**SUGGESTIONS FOR IMPROVEMENT TO PUBLICATION**

Your comments will be investigated by appropriate technical personnel
and action will be taken as required. Receipt of all forms will be
acknowledged; however, if you require a detailed reply, check here. ☐

FROM: NAME _____ DATE _____

TITLE _____

COMPANY _____

ADDRESS _____

_____

PLEASE FOLD AND TAPE—
NOTE: U. S. Postal Service will not deliver stapled forms

---

III III

## BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 39531 WALTHAM, MA 02154

POSTAGE WILL BE PAID BY ADDRESSEE

HONEYWELL INFORMATION SYSTEMS
200 SMITH STREET
WALTHAM, MA 02154

ATTN: PUBLICATIONS, MS486

---

# Honeywell

Together, we can find the answers.

# Honeywell

10UC-00