Source Programs

User's Guide

hp HEWLETT
PACKARD

INTRODUCTION

The source product is comprised of magnetic tape(s) that are disc images of source programs. These source programs are provided so users can gain a fuller understanding of the structure and implementation of previously released software products. The source programs, stored to this medium, also prove to be suitable for archival purposes.

This manual contains the necessary information for using the RTE Disc Utility to access the source programs stored on the supplied magnetic tape(s). The manual also contains the general procedure for creating relocatables from the source programs.

It is assumed that the user of this manual is familiar with the operation of the RTE operating system, RTE File Manager program, and the RTE On-Line Disc Utility.

The magnetic tape(s) include a "HELP" file as the first file on Tape 1. This ASCII file is in FMGR format and contains the specific information about the included source programs.

Some of the source programs contained on the tape(s) may have been written in SPL (System's Programming Language). To compile these sources, it will be necessary to obtain the SPL/2100 Compiler and operating instructions which are available through Data Systems Contributed Library.

TABLE OF CONTENTS

The HELP file is the first file found on the magnetic tape. (It's on Tape 1 if the source product is contained on more than one tape). The file includes the names of all the source programs, the language in which they are written, and their part numbers.

If the source product is on more than one tape, the file will also show which tape each source program is on. However, this listing of programs does not necessarily reflect the actual order of appearance within each tape.

Access to the HELP file can be gained through the FMGR Store command:

    :ST,MT,LU

where

    LU = list device
    MT = magnetic tape unit

It's a good idea to get a hard copy of this file for reference when using Section III of this manual. The HELP file printout will have a format similar to the following:

TAPE #n

FILENAME	LANGUAGE	PART NO	DATE CODE
source name 1	ASMB	XXXXX-18XXX	XXXX
source name 2	FTN4	-18XXX	:
:	:	:	:
:	:	:	:
source name n	SPL	-18XXX	XXXX

Access to the source programs is gained through the Disc Utility program, which is available on RTE operating systems. This utility must be used on-line and all commands issued must be of type "LU". Refer to the RTE Utility Programs Reference Manual (Part No. 92060-90017) for details on using these commands.

The disc image files created by the Disc Utility containing the sources were designed to occupy a 203-track scratch cartridge on your disc. This cartridge size is used so that the files can be copied to any HP disc (7900, 7905/06/20) with complete compatibility.

NOTE

The Disc Utility must be used on-line and as type LU because of the physical differences in discs. By using the commands in this mode, the sources may be restored from and saved to the magnetic tape(s) from any of the HP discs specified above and still maintain their complete compatibility.

Since the first file of Tape 1 is the HELP file, the first file accessible by the Disc Utility is File 2. A sample command sequence using the On-Line Disc Utility to access one such file is shown below (user response is underlined):

```
:RU,RSTOR,LU,,MT,CR
```

where

    LU = list device
    MT = magnetic tape unit
    CR = disc cartridge number (203 tracks required)

```
FILE #?

2                                     Second file (HELP was File 1)

FILE ID:

TAPE #1 RTE-IV SOURCE PACKAGE

TAPE #:   01

OK?      (YES/NO)

YES

VERIFY?   (YES/NO)

YES

VERIFYING
```

There may be more than one of these files on your magnetic tape(s). Therefore, if all of the source programs specified in the HELP file do not appear in the first file accessed, they will be found in the next file. By repeating the above process (specifying the next file), the remainder of the source programs can be accessed.

SOURCE CONCATENATION

To create relocatables from source programs written in a single language, use one of the following procedures.

For RTE-II or RTE-III:

```
:LG,10              Allocate Load-and-Go area
:MS,&name           Move temporary source to Logical Source area
:RU,processor,2,LU,99
:SA,LG,%name        Save contents of Load-and-Go area
```

where
  `processor` = FTN4, ASMB, or SPL
  `&name` = Source filename
  `LU` = List device
  `%name` = Relocatable filename

For RTE-IV:

```
:RU,processor,&name,LU,%name
```

where the parameters are the same as above.

For a source program written in SPL, refer to the operating instructions for the SPL/2100 Compiler.

Some source program files are actually concatenation of several programs written in different languages combined into one file. To create relocatables from these source program files, follow the procedure given below.

Step 1

a. Determine what language the source program was written in, either by referring to the listing of the HELP file or by using the Editor.

b. Break the multiple language source program file into separate files each containing statements for only one language. Do this by using the Editor to separate the file and to create new temporary files. Some Editor commands to use are:

1. `/DFTN4`   (delete all statements up to the first FORTRAN statement)

2. `/-9999`   (delete all subsequent statements)

3. `/EC&tempfile` (create a temporary source file, 6 characters maximum)

Step 2

Run the FTN4, ASMB, or SPL processor on each of the temporary source program files and concatenate the separate relocatable modules into one resultant relocatable file.

For RTE-II or RTE-III:

```
:LG,10                   Allocate Load-and-Go area
:MS,&tempfile            Move temporary source to Logical Source area
:RU,processor,2,LU,99
      :
      :                  (Repeat the MS and RU commands for each temporary source
      :                  file created from a multiple language source program.)
      :
:SA,LG,%name             Save the contents in the Load-and-Go area in a relocatable file
```

where

&tempfile = name of a temporary source file created in step 1
processor = FTN4, ASMB, or SPL
LU = List device
%name = resultant relocatable filename

For RTE-IV:

```
:LG,10                   Allocate Load-and-Go area
:RU,processor,&tempfile,LU,%tempfile
:MR,%tempfile            Move relocatable to Load-and-Go
      :
      :                  (Repeat the RU and MR commands for each temporary source
      :                  file created from a multiple language source program.)
      :
:SA,LG,%name             Save the contents in the Load-and-Go area in a resultant relocatable file
```

where

processor = FNT4 or ASMB
&tempfile = name of a temporary source file created in step 1
%tempfile = name of a temporary relocatable file
%name = resultant relocatable filename

For a temporary source program written in SPL, refer to the operating instructions for the SPL/2100 Compiler.

HELP FILE FOR RTE-IV SOURCE PROGRAMS

TAPE #1

FILENAME	LANGUAGE	PART NO.	DATE CODE
OPERATING SYSTEM			
&CSY4	ASMB	92067-18014	2001
&4DISP	ASMB	-18015	1926
&RTIM4	ASMB	-18016	1805
&ASCM4	ASMB	-18017	1805
&4RTIO	ASMB	-18018	2001
&4EXEC	ASMB	-18019	1926
&$TRN4	ASMB	-18020	1805
&4SCHD	ASMB	-18021	1926
&$ALC4	ASMB	-18022	1805
&4OCMD	ASMB	-18023	1805
&PERR4	ASMB	-18024	1840
&4CNFG	ASMB	-18025	1926
&$TB14	ASMB	-18026	1926
&$TB24	ASMB	-18027	1926
&$SUB2	ASMB	92068-18042	2013
MAPPING ROUTINE			
&4PVMP	ASMB	92067-18001	1805
LOADR			
&4LDR	ASMB	92067-18002	2013
MULTI-TERMINAL MONITOR			
&4MTM	ASMB	92067-18003	1926
POWERFAIL			
&4DP43	ASMB	92067-18004	1926
AUTO RESTART			
&4AUTR	FTN4	92067-18005	1805
CONFIGURATION EXTENSION			
&$CNFX	ASMB	92067-18006	2001
BATCH MONITOR PROGRAM			
&D.RTR	ASMB	92002-18007	1926
&FMGR	ASMB/SPL	-18008	2001
BATCH MONITOR LIBRARY			
&BMLIB	ASMB/SPL	92002-18006	2001

SPOOL SYSTEM

&4GPOL	SPL/ASMB	92067-18028	2013
&JOB4	ASMB	-18029	1940
&4DV43	ASMB	-18030	2013
&EXTD4	ASMB	-18031	1805
&SPCL4	ASMB	-18032	1805
&4SMP	ASMB	-18078	1940
&4SPOT	ASMB	-18079	1805

SYSTEM LIBRARY

&4SYLB	ASMB	92067-18035	2013
&ALRN4	ASMB	-18036	1805
&RNRQ4	ASMB	-18037	1805
&LURQ4	ASMB	-18038	1805
&PRTN4	ASMB	-18039	1805
&EQLU4	ASMB	-18040	1805
&DRCT4	ASMB	-18041	1805
&REIO4	ASMB	-18042	1926
&IFBK4	ASMB	-18043	2013
&CORA4	ASMB	-18044	1805
&CORB4	ASMB	-18045	1805
&CVT34	ASMB	-18046	1805
&KCVT4	ASMB	-18047	1805
&MESS4	ASMB	-18048	1840
&PARS4	ASMB	-18049	1840
&PRSE4	ASMB	-18050	1805
&TMVL4	ASMB	-18051	1913
&CNMD4	ASMB	-18052	1805
&CNMO4	ASMB	-18053	1805
&IPRS4	ASMB	-18054	1805
&.MVW4	ASMB	-18055	1805
&GTST4	ASMB	-18056	1805
&.EMAP	ASMB	-18057	1805
&EMIO4	ASMB	-18058	1805
&MMAP4	ASMB	-18059	1805
&EMAS4	ASMB	-18060	1805
&EMST4	ASMB	-18061	1805
&TRLU4	ASMB	-18062	1805
&IFTY4	ASMB	-18063	1805
&LGLU4	ASMB	-18064	1826
&.IAE4	ASMB	-18065	1805
&.RAE4	ASMB	-18066	1805
&.XAE4	ASMB	-18067	1805
&.TAE4	ASMB	-18068	1901
&.ZAE4	ASMB	-18069	1901
&STDB4	ASMB	-18076	1805
&IDGT4	ASMB	-18077	1805
&IXGET	ASMB	-18080	1840
&IXPUT	ASMB	-18081	1840
&FTIME	ASMB	-18082	1840
&XLUEX	ASMB	-18117	2013
&LUTRU	ASMB	-18198	1913
&ENSES	ASMB	-18199	1913

&LIMEN	ASMB	-18256	1913
&SEGLD	ASMB	-18257	1913
&.ERES	ASMB	-18258	1913

TAPE #2

FILENAME	LANGUAGE	PART NO.	DATE CODE
GENERATOR			
&RT4GN	ASMB	92067-18009	1926
SWITCH PROGRAM			
&4SWTH	ASMB	92067-18010	1926
WHZAT PROGRAM			
&4WHZT	ASMB	92067-18007	1926
LOG TRACK TABLE			
&LGTAT	ASMB	92067-18008	1926
EMA VERIFIER			
&#EMA	ASMB	92067-18013	1805
KEYS UTILITY			
&KEYS	FTN4	92060-18052	1707
KEYS DUMP UTILITY			
&KYDMP	FTN4	92060-18053	1707
SAVE PROGRAM			
&SAVE	ASMB/FTN4	92060-18039	1901
RESTORE PROGRAM			
&RESTR	ASMB/FTN4	92060-18040	2001
VERIFY PROGRAM			
&VERFY	ASMB/FTN4	92060-18041	1704
COPY PROGRAM			
&COPY	ASMB/FTN4	92060-18042	1704
DISC BACK-UP PROGRAM			
&DBKLB	ASMB/FTN4	92060-18043	1901

```
        FLEXI DISC BACK-UP
            &MSAFD          FTN4              92064-18232        1740


        READ NAMR PROGRAM
            &RDNAM          SPL               92060-18045        1926

TAPE #3


            FILENAME        LANGUAGE          PART NO.      DATE CODE
            --------        --------          --------      ---------


        ASSEMBLER
            &4ASMB          ASMB              92067-18011        2013
            &4ASB0          ASMB                  -18070        1940
            &4ASB1          ASMB                  -18071        1940
            &4ASB2          ASMB                  -18072        1940
            &4ASB3          ASMB                  -18073        1940
            &4ASB4          ASMB                  -18074        1940


        CROSS REFERENCE
            &4XREF          ASMB              92067-18012        1805


        EDITOR
            &EDITR          ASMB              92002-18010        2026


        FORTRAN IV
            &FTN4           ASMB              92060-18092        2026
            &FFTN4          ASMB                  -18093        1913
            &0FTN4          ASMB                  -18094        2026
            &1FTN4          ASMB                  -18095        2013
            &2FTN4          ASMB                  -18096        2026
            &3FTN4          ASMB                  -18097        1913
            &4FTN4          ASMB                  -18098        2026
            &5FTN4          ASMB                  -18101        1913


        FORMATTER LIBRARY
            &FF4.N          ASMB              24998-18002        1926


        DECIMAL SRTING ARITH.
            &ADD            ASMB              24306-18004        2026
            &A2DE           ASMB                  -18005        2026
            &CARY           ASMB                  -18006        2026
            &JSCOM          ASMB                  -18007        2026
            &DCAR           ASMB                  -18008        2026
            &DEA2           ASMB                  -18009        2026
            &DIV            ASMB                  -18010        2026
            &EDIT           ASMB                  -18011        2026
            &D1D2           ASMB                  -18012        2026
            &D2D1           ASMB                  -18013        2026
            &FILL           ASMB                  -18014        2026
```

&GET	ASMB	-18015	2026
&MOVE	ASMB	-18016	2026
&MPY	ASMB	-18017	2026
&PUT	ASMB	-18018	2026
&SIGN	ASMB	-18019	2026
&SUB	ASMB	-18020	2026
&ZONE	ASMB	-18021	2026
&S.GET	ASMB	-18022	2026

RTE/DOS LIBRARY

&RLIB1	ASMB	24998-18001	1926
&RLIB2	ASMB	-18009	1926
&RLIB3	ASMB	-18011	1926

COMPILER LIBRARY

&OPN.C	ASMB	92060-18054	1926
&CLO.C	ASMB	-18055	1913
&RED.C	ASMB	-18056	1926
&WRT.C	ASMB	-18057	2013
&SPC.C	ASMB	-18058	1901
&RWN.C	ASMB	-18059	1901
&EOF.C	ASMB	-18060	1901
&GMM.C	ASMB	-18061	1901
&OLY.C	ASMB	-18062	1901
&RUN.C	ASMB	-18063	1913
&END.C	ASMB	-18064	1901
&PRM.C	ASMB	-18065	1901
&GMS.C	ASMB	-18066	1901
&WARC.	ASMB	-18067	1901
&GES.C	ASMB	-18068	1901
&GEX.C	ASMB	-18069	1901
&CRE.C	ASMB	-18070	1901
&ADS.C	ASMB	-18071	1901
&C.BS2	ASMB	-18072	1901
&ID.AD	ASMB	-18073	1901
&C.TRN	ASMB	-18074	1901
&C.SAU	ASMB	-18075	1901
&C.SOR	ASMB	-18076	1901
&C.BIN	ASMB	-18077	1901
&C.LST	ASMB	-18078	1901
&C.SC0	ASMB	-18079	1901
&C.SC1	ASMB	-18080	1901
&C.SC2	ASMB	-18081	1901
&C.BNS	ASMB	-18082	1901
&C.BSA	ASMB	-18083	1901
&C.BSO	ASMB	-18086	1901
&C.BBI	ASMB	-18087	1901
&C.BLI	ASMB	-18088	1901
&C.BSO	ASMB	-18089	1901
&C.BS1	ASMB	-18090	1901
&SUP.C	ASMB	-18091	1901
&$CLBR	ASMB	-18099	1913
&C.BIA	ASMB	-18100	1901

FILENAME	LANGUAGE	PART NO.	DATE CODE
&C.RP	ASMB	-18102	1926
&GETBF	ASMB	92067-18084	1913
&RETBF	ASMB	-18085	1913
&TRIM	ASMB	-18086	1913
&MEMBF	ASMB	-18087	1913

TAPE #4

FILENAME	LANGUAGE	PART NO.	DATE CODE

DRIVER PACKAGE

FILENAME	LANGUAGE	PART NO.	DATE CODE
&DVM72	ASMB	9580-18079	2026
&DSCHD	ASMB	9580-18125	A
&DVR15	ASMB	9601-18021	1901
&DVR33	ASMB	12732-18001	1805
&DVR10	ASMB	20808-80001	C
&PLOT	ASMB	20810-80001	C
&DVR31	ASMB	29013-80001	1710
&DVR12	ASMB	29028-80002	1805
&DVR00	ASMB	29029-80001	1740
&DVR11	ASMB	29030-80001	1710
&DVR37	ASMB	59310-18005	2026
&SRQ.P	ASMB	59310-18007	1805
&IB4A1	ASMB	59310-18012	2026
&IB4A2	ASMB	59310-18013	2026
&IB4A3	ASMB	59310-18014	2026
&IB4A4	ASMB	59310-18015	1940
&1DV10	ASMB	72008-80001-4	A
&2DV10	ASMB	72009-80001	A
&DVA13	ASMB	91200-18001	1648
&CHARS	ASMB	91200-18002	1648
&TVERF	ASMB	91200-18004	1648
&DVA12	ASMB	92001-18020	1826
&DVR05	ASMB	92001-18026	1926
&DVA05	ASMB	92001-18035	2013
&DVR32	ASMB	92060-18031	2013
&LP31	ASMB	92062-18009	1805
&DVB12	ASMB	92062-18010	2013
&DVR23	ASMB	92202-18001	1913
&DVA47	ASMB	92900-18002	1913

HEWLETT
PACKARD