

RTE Contributed Software Library

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PROFESSIONALS

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Note: This document is based on the information file that accompanied each release of a RTE/CSL tape. As such, some of the information is not relevant to the CD-ROM version of the RTE/CSL.

GENERAL INTRODUCTION

CSL/RTE is a user-contributed library of software for the HP 1000 computer systems. Many of the contributions to the CSL/RTE library are general usage programs, while others are oriented to a particular purpose. These contributions provide a good source of problem-solving tools. They may be used directly in an application, or they may give examples of problem-solving methods.

The application programs in the library are supplemented by a large number of system programming utilities, as well as by a few demonstrations and games.

The success of the contributed library rests on two factors:

1. The quality of the contributions, and
2. The efficient operation of the library itself.

The quality of a contribution is in the hands of the contributor. Complete testing, good documentation, and general carefulness by the user will increase the value and usefulness of a contribution.

The efficient operation of the library involves two major responsibilities:

Maintenance - Accepting new contributions, updating the library with revisions to existing contributions, and maintaining a catalog.

Distribution - Accepting orders, maintaining subscriptions, and duplicating & distributing the library, the catalog, and periodic releases.

These responsibilities for the CSL/RTE library lie with Interex.

PUBLICATION HISTORY

First Edition	Jan 80	(Software revision code 2001)
Second Edition (reprint)	Dec 80	(Software revision code 2001)
Third Edition	Apr 81	(Software revision code 2101)
Fourth Edition	Oct 81	(Software revision code 2140)
Fifth Edition	Oct 82	(Software revision code 2213)
Sixth Edition	Dec 82	(Software revision code 2240)
Seventh Edition	Jul 83	(Software revision code 2313)
Eighth Edition	Feb 84	(Software revision code 2340)
Ninth Edition	Jun 84	(Software revision code 2433)
Tenth Edition	Aug 85	(Software revision code 2533)
Eleventh Edition	Aug 86	(Software revision code 2625)
Twelfth Edition	Jul 87	(Software revision code 2730)
Thirteenth Edition	Jul 88	(Software revision code 2830)
Fourteenth Edition	Jul 89	(Software revision code 2930)
Fifteenth Edition	Jul 90	(Software revision code 3030)
Sixteenth Edition	Jul 91	(Software revision code 3126)
Seventeenth Edition	Jul 92	(Software revision code 3226)
Eighteenth Edition	Jul 93	(Software revision code 3326)
Nineteenth Edition	Jul 94	(Software revision code 3426)
Twentieth Edition	Aug 95	(Software revision code 3535)
Twenty-first Edition	Aug 96	(Software revision code 3635)
Twenty-second Edition	Sep 97	(Software revision code 3735)
Twenty-third Edition	Oct 98	(Software revision code 3840)
Twenty-fourth Edition	Oct 99	(Software revision code 3940)
Twenty-fifth Edition	Aug 00	(Software revision code 4030)
Twenty-sixth Edition	Aug 01	(Software revision code 4130)

CSL/RTE TAPE FORMAT

The CSL/RTE Release is contained on a single magnetic tape. The tape holds all contributions being released at this time. The standard 1/2 " mag tape is written in the following format:

```

-----
File #1 ! Transfer File      !\
!-----!
#2 ! Transfer File      !\
!-----!
#3 ! %GOTEM relocatable !\
!-----!
#4 ! %CISUB relocatable ! /  --Self-installing data retrieval
!-----!                    /  system (replaces "Save #1")
#5 ! &GOTEM source      ! /
!-----!
#6 ! &CISUB source      ! /
!-----!\
!-----! Double EOF
!-----!/
! Save #2 Directory    !\
!-----!
! Backup Directory     !\
!-----!
! Save #2 Data Files   ! /  Save #2 (SAVEM format)
! Save #2 Data Files   ! /
! Save #2 Data Files   ! /
!-----!\
!-----! Double EOF
!-----!/
! Save #3 Directory    !\
!-----!
! Backup Directory     !\
!-----!
! Save #3 Data Files   ! /  Save #3 (if any)
! Save #3 Data Files   ! /
! Save #3 Data Files   ! /  (Not present on all releases
! Save #3 Data Files   ! /  of CSL/RTE tapes)
!-----!\
!-----! Triple EOF
!-----!/
!-----!/
End of Data

```

The first 6 files, which contain the self-installing data retrieval system, are stored in FMGR 'ST' format. These files replace what would normally be Save #1 on a 'SAVEM' tape. A double-EOF separates each 'Save' on the tape and a triple-EOF terminates the last 'Save'. Each 'Save' contains a directory file, followed by an arbitrary number of data files. The directory files and data files are all stored in a packed binary format (by program SAVEM) and must be retrieved using either program GOTEM or GETEM. All data files are in FMGR format with 6-character names (see section on File-Naming Conventions).

FILE-NAMING CONVENTIONS

Each CSL/RTE contribution is assigned a unique 4-character identifier to identify all the associated files for that contribution on the CSL/RTE tape. This identifier is listed under "CONTRIBUTION NUMBER" in the index and is prominently displayed in the "CONTRIBUTION ABSTRACTS" section of the catalog. All files associated with a given contribution have the "CONTRIBUTION NUMBER" as the first 4-characters of their names.

The file-naming algorithm is simple. File names are of the form:

'ANNMM' where: ANN is the contribution number.
 'A' is a letter code indicating the
 CSL/RTE release number. Each new
 release is given a new letter
 ('Z' for release 4030).
 'NNN' is the contribution serial number
 within the release.
 MM is the number of the file within the
 contribution.

The file 'ANN00' is always a 'Rename Transfer File' which can be used to copy contribution files to a specified directory, renaming them to their original names at the same time. Detailed instructions for usage of the ANN00 file is given under 'File-Renaming Instructions'.

The file 'ANN01' is always the standard submission file that describes the contribution in detail.

Example: The CSL/RTE release 'W' 3rd contribution with 6 files
 is named:
 Z00300 ,Z00301, Z00302, Z00303, Z00304, Z00305
 (where Z00300 is the 'Rename Transfer File' and
 Z00301 is the 'Submission File')

DATA-RETRIEVAL INSTRUCTIONS

Standard 1/2" Computer Tape (SAVEM format)

IMPORTANT: Under RTE-6 or RTE-A, make sure that LINK is RP'ed!

Mount the mag tape on Logical Unit <mtlu> and then type
(under FMGR):

```
:TR,<mtlu>,<mtlu>,<cart>
```

where <cart> is the FMGR cartridge to be used for temporary scratch disk files. Further instructions will be given automatically.

The data-retrieval system will retrieve files #3 and #4 (%GOTEM,%CISUB) from the mag tape and store it on the scratch disk. Then GOTEM will be loaded (using LINK or LOADR) and scheduled for execution. [%CISUB is relocated only on systems having CI installed; %CISUB is a set of subroutines that allow GOTEM access to the CI system for restoring files. On non-CI systems, %CISUB will not be used. Furthermore, if all load attempts fail, file #5 (&GOTEM) will be retrieved and an attempt made to compile (first FTN7X, then FTN4X, then FTN4) and load (first LINK, then LOADR).] Upon execution, GOTEM is automatically instructed to position to Save #2 (see CSL/RTE Tape Format). The user will then be able to retrieve data files.

If you do not have any FMGR cartridges on your system, you can load GOTEM by simply restoring files #3 and #4 (%GOTEM,%CISUB) and then linking them, as follows (assume mag tape lu is 8):

```
CI> _|CN,8,FF
CI> _|CN,8,FF
CI> _|CO,8,%GOTEM
CI> _|CO,8,%CISUB
CI> _|LINK,%GOTEM,%CISUB,GOTEM::PROGRAMS
```

Sample GOTEM Session

Program GOTEM is self-instructing and simple to use. The following is an example session with GOTEM to restore a single contribution. Multiple contributions may be restored simultaneously simply by specifying them in the restore list. User entries are underscored, comments in (parenthesis):

```
:RU,GOTEM \
Enter mag tape lu: 9 >(done automatically from transfer file)
Enter Save# to be accessed: 2 /
(GOTEM positions tape)
Tape positioned to start of Save# 2
Save date (Y:D:H:M): 2000:190:18: 0
Header: CSL/RTE REV 4030
```

Valid commands are:

```
DL - directory list of current 'Save'
RF - restore files to disc from current 'Save'
```

SA,n - position tape to Save#n (currently in Save# 2)

EX - terminate and rewind tape

Command? DL

Enter lu for directory listing (default your terminal): 1

'-' may be used as wildcard character in file name.

Enter namr of desired file: Z007--

Save# 2

Save date (Y:D:H:M): 2000:190:18: 0

Header: CSL/RTE REV 4030

Name	Scode	Cart	Type	Size
Z00700:	0:	-61:	4:	2
Z00701:	0:	-61:	4:	18
Z00702:	0:	-61:	4:	82

3 files found matching Z007--

Command? RF (Restore files)

Enter destination FMGR cartridge reference or

CI global directory (2 chars max) for restored files: SC

Enter list of file names to be restored.

'-' may be used as wildcard: for example, 'C023--' will

restore all files which have 'C023' as the first 4 characters.

Enter '::' to terminate list of files to be restored.

Enter '++' at any time to list files currently in 'restore' list.

Enter '/A' to abort and return to command mode.

Enter (wildcard) namr to be restored: Z007--

...(Enter others as desired)

....('-----' restores all)....

Enter (wildcard) namr to be restored: ++ (list current restore list)

Enter lu for listing: 1

Files currently in the 'restore' list --

Name	Scode	Cart	Type	Size
Z00700:	0:	-61:	4:	1
Z00701:	0:	-61:	4:	9
Z00702:	0:	-61:	4:	41

3 files to be restored

Enter (wildcard) namr to be restored: :: (end restore list)

3 files to be restored

Override security codes of restored files? (Y/N) Y (FMGR only)

Enter security code: AW

Ready to proceed with file restore? (Y/N) Y

	Name	Scode	Cart	Type	Size
Searching					
Creating	Z00700:	AW:	SC:	4:	1
Writing	Z00700:	AW:	SC:	4:	1
Searching					
Creating	Z00701:	AW:	SC:	4:	9
Writing	Z00701:	AW:	SC:	4:	9
Searching					

```
Creating Z00702:   AW:   SC:   4:   41
Writing  Z00702:   AW:   SC:   4:   41
Normal end
      3 files restored
```

Command? **EX** (Terminate GOTEM and rewind tape)

DAT Tape Cartridge

CSL/RTE DAT tapes are written in FST format. Data is retrieved using the HP-supported FST program. All data file are in FMGR format with 6-character names (see section on File-Naming Conventions).

LINUS Tape Cartridge

All CSL/RTE LINUS (CS-80) tapes are written in TF format. Data is retrieved using the HP-supported TF program. All data files are in FMGR format with 6-character names (see section on File-Naming Conventions).

FILE-RENAMING INSTRUCTIONS

Once the desired data files have been restored, they must be renamed to their original names before use. This is the purpose of the 'Rename Transfer File', which is always named 'ANNN00', where 'ANNN' is the contribution number (see File-Naming Conventions). Due to the large fraction of systems with CI capability and the correspondingly large fraction of 'CI-type' file names among the contributions, all rename transfer files on this release are written as CI transfer files which do a copy operation with renaming to the original file names.

Renaming a Single Contribution

The transfer file ANNN00 included with each contribution may be used to copy and rename all the files within that contribution as follows:

```
TR,ANNN00,<source dir>,<dest dir>,MO/CO
```

where

<source dir>	is the FMGR or CI-root directory containing the files as restored from the CSL tape (no leading '/').
<dest dir>	is an existing FMGR or CI directory (with leading '/' if FMGR or CI-root directory).
MO/CO	'MO' if files are to be moved between CI directories on the same disc lu using the CI 'MO' command 'CO' if files are to be copied either from a FMGR area or to a directory on a different disc lu using the CI 'CO' command

All files within the contribution ANNN will be copied to <dest dir> and renamed to their original names (names on FMGR cartridge will be truncated to six characters). For example,

```
TR Z00100::CL CL /CSL4030/Z001 CO
```

will copy and rename all files from contribution Z001 on directory CL to directory /CSL4030/Z001. Any subdirectories under /CSL4030/Z001 will be created as necessary.

Copying and Renaming All CSL Contributions to CI Directory

Transfer file *TOCI is provided on the CSL tape to copy and rename all CSL contributions into a tree-structured CI directory. First, restore all CSL files to a FMGR cartridge or 2-char CI directory using program GOTEM. Then initiate *TOCI as follows:

```
TR *TOCI <source dir> <dest dir> MO/CO
```

where

<source dir> is the FMGR or CI-root directory containing the files as restored from the CSL tape (no leading '/').
<dest dir> is an existing CI directory (with leading '/' if CI root directory).
MO/CO 'MO' if files are to be moved between CI directories on the same disc lu using the CI 'MO' command
'CO' if files are to be copied either from a FMGR area or to a directory on a different disc lu using the CI 'CO' command

Note: Transfer file *TOCI1 is called by *TOCI and is assumed to be available on <source dir>.

For example, to copy all contributions to CI directory /CSL4030:

```
TR *TOCI::CL CL /CSL4030 CO
```

Each contribution will be copied (with rename) to a separate sub-directory under root directory /CSL4030.

For systems without CI capability, the transfer files ANNN00 may be easily edited for compatibility with FMGR. However, file names may have to be modified in order to bring them into compliance with FMGR limitations.

DEFINITION OF A LIBRARY CONTRIBUTION

A contribution to the CSL/RTE library consists entirely of documentation and contribution files supplied by the contributor on computer-readable media of 2 or more files. These files are of three different types:

Submission File	One file containing standardized documentation for the contribution. This file is created through use of the FMGR file #SUBMT (See section HOW TO SUBMIT A CONTRIBUTION TO THE LIBRARY').
Contribution File(s)	One or more files composed of program sources, transfer files, data files, etc.; i.e. the programs and everything needed to use them.
Extended Documentation	An optional file consisting of documentation considered too lengthy to be placed into the submission file.

HOW TO SUBMIT A CONTRIBUTION

Step 1) Use the editor to fill out the blank file titled #SUBMT

The file #SUBMT resides on each CSL/RTE release tape and is shown below. This file enables the user to easily prepare information about his contribution. This information should be stored in a file whose name begins with ' (under FMGR) or has an extent of .SBMT (under CI).

INTEREX CONTRIBUTED SOFTWARE LIBRARY CSL/1000

CONTRIBUTION SUBMISSION FORM

Contribution Name.....	:	[16 characters maximum]
Title.....	:	[64 characters maximum]
File Names.....	:	:00. Rename Transfer File [see Note 1.]
		:01. ' or .SBMT Submission File [see Note 2.]
		:02. first file name [see Note 3.]
		:03. second file name
		[see Note 4.]
Operating System(s).....	:	
Language(s).....	:	
External Support Req'd...	:	
If Re-submission, Reason.	:	
Keywords.....	:	:01. [Choose from suggested keyword list]
		:02.
		:03.
		:04.
		:05.
External Support Req'd...	:	
If Re-Submission, Reason.	:	
Contributor's Name.....	:	
Company.....	:	
Street.....	:	
City.....	:	
State.....	:	
Country.....	:	
Zip Code.....	:	
Phone Number..	:	
Fax Number....	:	
E-mail address	:	
Contribution Abstract.....	:	
Additional Documentation.	:	

Note 1: This line should appear as is. The CSL librarian will create the rename file.

Note 2: SUBMIT files (and only SUBMIT files) should begin with an ' (apostrophe) if in FMGR format or use a .SBMT extent if in hierarchical (CI) file format.

Note 3: It is very helpful if file names use the standard HP file naming conventions (& or .FTN for source, % or .REL for relocateables, #, .CMD, or .LOD for command files, etc.). Directory names or CRNs should not be used; all CI files should be on the same directory. FMGR files should not contain the characters '/', '.', or '@' (slash, dot, or commercial 'at').

Note 4. Any line without a : (colon) will be treated as a comment line.

Example of proper 'File Names' section:

```
File :00. Rename transfer file (Prepared by Interex)
      :01. XYZ.SBMT Submission file (or 'XYZ')
           Prepared by user, using blank #SUBMT file.
      :02. XYZ.FTN XYZ source code [or &FTN]
           Comments are optional
      :03. XYZ.REL XYZ relocatable [or %XYZ]
      :04. XYZ.LOD XYZ LINK command file [or #XYZ]
      :05. XYZ.DOC Manual for XYZ [or "XYZ"]
```

Step 2) Make a listing of the #SUBMT file just made and sign the disclaimer.

A copy of the #SUBMT file (including the disclaimer) must be submitted with the contribution. If no line printer is available to the contributor, copy the following disclaimer, sign it, and submit with the contribution.

DISCLAIMER:

To the best of my knowledge, this contribution is free of any proprietary information belonging to any person or organization and is not licensed by any person or organization. I am making this contribution available to Interex, The International Association of Hewlett-Packard Computer Users. I hereby agree that Interex may reproduce, publish, and use this contribution, and authorize others to do so, without obligations or liability of any kind.

(SIGNATURE)

(DATE)

Step 3) Place submission file and all contribution files onto tape.

The tape should contain the submission file (copy of the #SUBMT), all sources, transfer files., etc, any additional documentation required. Contributions will be accepted in SAVEM, READR/SAVER, TF or FC format. It is preferable to have the files on mag tape or mini-cartridge, but they may be placed on LINUS (CS-80) tape if necessary. The tape , plus the listing of the submission file with the signed disclaimer, constitute the whole contribution. No additional paper documentation is to be submitted, e.g. a user manual.

Step 4) Mail the contribution to Interex

The tape containing the submission file and all source files, transfer files, etc., plus the signed disclaimer, should be mailed to Interex:

CSL/RTE Chairman
Interex
1192 Borregas Ave.
Sunnyvale, California 94088-3439
U.S.A.
(408) 747-0227

WHERE TO GET THE #SUBMT FILE

The #SUBMT file is included on every CSL/RTE mag tape. See the section 'CSL/RTE Tape Format' for details on the format of the tape.

INTEREX CONTRIBUTED-SOFTWARE EVALUATION FORM

USER Site Information:

HP1000 Series (M, E, F, A, XL) _____

RTE Revision _____

OpSys (RTE-6, RTE-A, etc) _____

CONTRIBUTION Information:

Library RELEASE (3635, 3735, 3840, 4030, etc) _____

Contribution No. (Z007, etc) _____ Contribution Name _____

Evaluation: ___ Works as Documented
 ___ Works with Exception (please explain below)
 ___ Abandoned due to: ___ incomplete documentation
 ___ erroneous documentation
 ___ operation doesn't match example
 ___ program will not load
 ___ program will not execute
 ___ source code will not compile

Explanation: _____

Your Name _____
Company _____
Street _____
City/State/Zip _____
Telephone _____
e-mail _____

SEND TO: CSL/RTE Manager
 INTEREX
 1192 Borregas Ave.
 Sunnyvale, CA 94088-3439 USA

If you have any further problems or questions concerning contributions in the library, the library itself, the catalog, submitting contributions, ordering the library, or anything about the INTEREX, please contact:

Interex
1192 Borregas Ave.
Sunnyvale, California 94088-3439
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(408) 747-0227
cslrte@interex.org

ANY QUESTIONS?

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KEYWORD LIST

9825	DEBUG	INTERPRETER	PURGE
ABSOLUTE	DEC	INTERRUPT	QDM
ACCOUNTING	DECIMAL	INVERSE	RANDOM
ACCOUNTS	DECODE	LABEL	REGRESSION
AI	DEMO	LANGUAGE	RELOCATABLE
ALGEBRA	DIAGNOSTIC	LAS	REPORTS
ALGOL	DIGITIZER	LASERJET	RESOURCE_NUMBER
ANALOG/DIGITAL	DIRECTORY	LIBRARY	RJE
ANALYZER	DISC	LINEAR_EQNS	SAVE/RESTORE
APPLE	DISPLAY	LINK	SCANNER
ARCHIVE	DMA	LIST	SCHEDULING
ARRAY	DOCUMENTATION	LOADER	SCRATCH
ASCII	DRIVER	LOGON/LOGOFF	SCSI
ASSEMBLER	DS	MACRO	SEARCH
ASTRONOMY	DUMP	MAGNETIC_TAPE	SECURITY
ASYNCHRONOUS	EBCDIC	MAIL	SEGMENTATION
ATS	EDITOR	MAINTENANCE	SESSION
BACI	EMA/VMA	MANAGEMENT	SHELL
BACKUP	EMULATOR	MAP	SHEMA
BAR_CODE	ENCRYPTION	MATHEMATICS	SIGNALS
BASIC	ENGINEERING	MATRIX	SIMULATOR
BATCH	ENTRY_POINTS	MEASUREMENT	SNAP
BCD	EQT	MEMORY	SOCKETS
BENCHMARK	ERROR	MENU	SOFTKEYS
BINARY	EXPERT_SYSTEMS	MERGE	SORT
BIT	EXTENTS	MESSAGE	SPEECH
BOOT-UP	FAIRCHILD	MICROCODE	SPELLING
BYTE	FIGURES	MISCELLANEOUS	SPL
C	FILES	MODEM	SPOOLING
CALCOMP	FILE_TRANSFER	MODIFY	SPREAD_SHEET
CALCULATOR	FILTER	MONITOR	STACK
CALENDAR	FINANCE	MOTOROLA	STATISTICS
CAMAC	FLOATING_POINT	MOUSE	STATUS
CARTRIDGE	FLOWCHART	MOVE	STORAGE
CASSETTE	FMGR	MULTI-PROGRAM	STRINGS
CDC	FONT	MULTI-TERMINAL	SYSTEM
CENTRONICS	FORMATTING	MULTIPLEXOR	SYSTEM_TABLES
CHARACTER	FORMS	NETWORK	TABLET
CHEMISTRY	FORTRAN	OFFICE	TEKTRONIX
CI	FOURIER	PACK	TERMINAL
CLASS_NUMBER	GAMES	PAPER_TAPE	TEST
CODE	GENERATION	PARSE	TEXT
COMMAND_FILES	GEODESY	PARTITION	TIME
COMMON	GEOMETRY	PASCAL	TOOLS
COMPARE	GLOBALS	PATH	TOUCH
COMPILER	GRAPHICS	PAYROLL	TRANSFORM
COMPLEX	HELP	PC	TRANSLATOR
CONFIGURE	HPIB	PERFORMANCE	TRANSPORTABLE
CONVERSION	I/O	PHYSICS	TRIGONOMETRY
COPY	IBM	PLOTTING	UNIX
CROSS-REFERENCE	ID_SEGMENTS	PLUS/1000	UPDATE
CS80	IMAGE	POLYNOMIAL	VAX
CSL	IMAGE_PROCESSING	POWERFAIL	WCS
DATA_ACQUISITION	INITIALIZE	PRE-PROCESSOR	WINDOWS
DATA_ANALYSIS	INPUT	PRECISION	WORD
DATA_BASE	INTEGER	PRINTER	WORD_PROCESSING
DATA_COMM	INTEL	PRIVILEGED	X.25
DATA_MGMT	INTERACTIVE	PROCEDURES	
DATE	INTERFACE	PROM	