TYMSHARE TYMCOM-X

USER
PROGRAM
INDEX

A Synopsis of
Programs and Facilities

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TYMSHARE, INC.
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◪ TYMSHARE ®

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Table of Contents

This is an index of languages, programs, and subroutines available on the Tymshare TYMCOM-X system. It is divided into sections according to type of usage. See the section entitled "program access" for information on how to run the programs.

Programming Languages and Text Editing

Program Name	Program Description	Support Code	Doc.	Program Location
10EDIT	Easy to use, line oriented text editor	III	None	
AID	Algebraic language similar to CAL and JOSS	III	DEC	
ALGOL	Algorithmic Language	III	DEC	
BLISS	Software Systems Language	III	DECUS	
CAL	Language similar to Tymshare CAL	III	DEC	
CFORTRAN	Conversational FORTRAN for debugging	III	#105	
COBAID	COBOL support system	III	#115	
COBOL	Common Business-Oriented Language	II	#22	
DDT	Dynamic Debugging Tool	III	DEC	
EDITOR	Tymshare text editing language	I	#312	
F10	FORTRAN-10 (DEC's new FORTRAN IV)	I	DEC	
F40	FORTRAN IV (Tymshare file handling)	I	#104	
FAIL	Stanford 1 pass assembly language	III	None	
FASBOL	SNOBOL4, a compiled version	III	TIN	UPL
LISP	Stanford AI LISP 1.6	III	DECUS	
MACRO	Basic assembly language for TYMCOM-X	III	DEC	
SAIL	Stanford version of ALGOL with extended features.	III	DECUS	
SFORTRAN	TYMCOM-X SUPER FORTRAN	III	#19	
SNOBOL	SNOBOL4 (string manipulation language)	III	TIN	
SUDS	Simplified User Dialog System	III	#932	
TECO	Generally well known PDP-10 EDITOR	III	#933	
TBA	TYMBASIC	I	#353	
XBASIC	Tymshare enhanced DEC BASIC	III	#338	

Data Base Management Systems

Program Name	Program Description	Support Code	Doc.	Program Location
MAGNUM	Relational Data Base Management System	I	#311	
X22	Interactive Retrieval System	I	#294	UPL

On-Line Data Bases

Program Name	Program Description	Support Code	Doc.	Program Location
SITEII	Census data base and reporting system	IV	#273	CENSIT
TYMQUOTE	Securities data base and reporting system	I	#381	TQ

Business and Financial Analysis Programs

Program Name	Program Description	Support Code	Doc.	Program Location
BBL	Basic Business Language	I	#23	CC
MANMAN	Inventory control and bill of materials	IV	#376	UPL
OPUS	MAGNUM inventory management system	I	Jun 76	OPUS
COUNT	Interactive accounting system	IV	#475	XBASIC
	COPAQUEN Library:			
ATAXLO	Evaluates "see-through" lease proposals	IV	#394	COPQ
BONDBI	Coupon optimization program	IV	#375	COPQ
CONSTR	Construction loan analysis	IV	#394	COPQ
DEPRE	Asset depreciation analysis	IV	#394	COPQ
FINAN	Loan analysis with various schedules	IV	#394	COPQ
FINLES	Leveraged lease analysis	IV	#345	COPQ
OWNLSE	Analyzes cost of ownership vs leasing	IV	#394	COPQ
PVIRR	Present value and return on investment	IV	#394	COPQ
SUPER	Comprehensive asset analysis	IV	#394	COPQ
TURNKEY	Progress vs. lumpsum payment options	IV	#394	COPQ
WRAP2	Wraparound loan analysis	IV	#394	COPQ
	TRICOMP Library:			
FINALY	Financial analysis program	IV	#29	AUDLIB
......	Statistical Sampling Library	IV	#178	AUDLIB
......	Lease Present Value Analysis	IV	#335	AUDLIB

Engineering Programs

Program Name	Program Description	Support Code	Doc.	Program Location
COMPACT	Microwave optimization	IV	#390	UPL
CSMP	Continuous System Simulation Program (See TYMCOM-IX manual, Pubs #304)	III	#530	
MACE	Mech. Analysis of Continuous Elastic Sys.	III	#277	UPL
SPICE	Electronic circuit analysis program	III	#171	
STRESS	IBM-1130 version of STRESS	III	#377	UPL
RIGID	Plane rigid frame structure computations	III	TIN	UPL
TRUSS	Computations with plane trusses	III	TIN	UPL

Statistics Programs

Program Name	Program Description	Support Code	Doc.	Program Location
STATPAK	Statistical Analysis Package	III	#176	

Linear Programming and Critical Path Programs

Program Name	Program Description	Support Code	Doc.	Program Location
CRAM	Extended CPM for project control	IV	#380	UPL
C3CPM	Critical Path Method	IV	COMARC	UPL
C3CPFM	Critical Path Method (file output)	IV	COMARC	UPL
MAXIMA	Linear programming program (See MINMAX manual, Pubs #270)	III	#341	

Plotting Programs and Libraries

Program Name	Program Description	Support Code	Doc.	Program Location
AGRAPH	TEKTRONIX advanced graphics package	III	TEK	UPL
TCS2A	TEKTRONIX terminal control system	III	TEK	UPL
TCS10	TEKTRONIX terminal control system	III	TEK	UPL
TLIB	TYPAGRAF FORTRAN subroutine library	III	None	UPL
ZLIB	Zeta Plotter FORTRAN subroutine library	III	ZETA	UPL

Utility Programs

Program Name	Program Description	Support Code	Doc.	Program Location
BATCH	Peripheral Processing Request Program	I	Self	
CARMEL	Subroutine library maintenance program	III	#105	
CKSUM	Computes the checksum of list of files	III	None	
CROSS	Produces cross-reference listings	III	XEXEC	
DIFFER	Compare two files for differences	III	DEC	
DISPATCH	Remote job entry program	II	#386	
NONAME	Account Supervisor Program	I	Self	
PASSWORD	Allows user to change password	I	XEXEC	
PERP	Periodic Processing System	I	TYM-IX	
DEFER	Deferred Processing System	I	TYM-IX	
RENBR	Renumbers FORTRAN programs	III	DECUS	UPL
RUNOFF	Text processing program	III	DECUS	
SETLIC	Sets license on files	III	XEXEC	
SORT	Sorts files according to specified keys	II	See COBOL	
SPOOL	Remote printer file spooling system	I	#398	
SSP	Scientific Subroutine Package for FORTRAN (Sources on trp 888, "Routine-name.F4")	III	None	UPL

Terminal Control Utility Programs

Program Name	Program Description	Support Code	Doc.	Program Location
BIONIC	Terminal input using BLOCK I/O	II	Self	
FTYPE	Terminal output using BLOCK I/O	II	Self	
TAPE	Paper Tape Package	II	#393	
PIP	PDP-10 Peripheral Interchange Program	III	DEC	
TIO	Setting terminal characteristics	II	Self	

Minicomputer Simulation Programs

Program Name	Program Description	Support Code	Doc.	Program Location
LNKX11	PDP11/45 Linking Loader	III	TIN	UPL
MACY11	PDP11/45 Relocatable Assembler	III	TIN	UPL
PALX11	Assembler for PDP-11	III	DECUS	UPL
SIM11X	Simulator for PDP-11	III	DECUS	UPL

Microprocessor Software Development Tools

Program Name	Program Description	Support Code	Doc.	Program Location
	BOSTON SYSTEMS Library:			
CA8080	Intel, NEC, TI and NSC 8080	IV	BSO	
CA6800	Motorola, Hitachi, and AMI 6800	IV	BSO	
CA4040	Intel 4004/4040	IV	BSO	
CA8008	Intel 8008	IV	BSO	
CAF8	Fairchild and MOSTEK F8	IV	BSO	
CA6500	MOS Technology MCS6500 Series	IV	BSO	
CA1000	Texas Inst. TMS1000 Series	IV	BSO	
CAPACE	National Semiconductor PACE	IV	BSO	
CAZ80	Zilog and MOSTEK Z-80	IV	BSO	
CAPPS8	Rockwell PPS8	IV	BSO	
CA1802	RCA CDP1802 (COSMAC)	IV	BSO	
CA9900	Texas Inst. TMS9900 Series	IV	BSO	
SM6800	Motorola 6800 simulator	IV	BSO	
SI1000	TI TMS1000 symbolic simulator/debugger	IV	BSO	
SI8080	8080 symbolic simulator/debugger	IV	BSO	
F46800	6800 FORTRAN IV cross-compiler	IV	BSO	

Microprocessor Software Development Tools (cont.)

Program Name	Program Description	Support Code	Doc.	Program Location
	INTEL Library:			
INT4	4004 simulator	IV	INTEL	UPL
INT40	4040 simulator	IV	INTEL	UPL
INT8	8008 simulator	IV	INTEL	UPL
MAC4	Assembler for MCS4 chip	IV	INTEL	UPL
MAC8	Assembler for MCS8 chip	IV	INTEL	UPL
MAC40	Assembler for MCS40 chip	IV	INTEL	UPL *
MAC80	Assembler for MCS80 chip	IV	INTEL	UPL *
INT80	8080 simulator software package	IV	INTEL	UPL *
PLM81	PL/M for INTEL 8080 chip (pass1)	IV	INTEL	UPL *
PLM82	PL/M for INTEL 8080 chip (pass2)	IV	INTEL	UPL *
PLM1	PL/M for INTEL 8008 chip (pass1)	IV	INTEL	UPL
PLM1EX	Expanded version of PLM1	IV	INTEL	UPL
PLM2	PL/M for INTEL 8008 chip (pass2)	IV	INTEL	UPL
PLM2EX	Expanded version of PLM2	IV	INTEL	UPL
XMAS	Assembler for INTEL 3000 chip	IV	INTEL	UPL
XMAP	Map program for INTEL 3000 chip	IV	INTEL	UPL

(*) Add "E" to program name for expanded version

Program Name	Program Description	Support Code	Doc.	Program Location
	NATIONAL SEMICONDUCTOR Library:			
ASM8T	NSC IMP-8 assembler	IV	NSC	NSC
ASM16	NSC IMP-16 assembler	IV	NSC	NSC
PCRBT	Produces CRBOOT format decks	IV	NSC	NSC
PPTBT	Produces hardware loadable paper tapes	IV	NSC	NSC
PRLMT	Produces IMP-16 loadable deck	IV	NSC	NSC
PRLM8	Produces IMP-8 loadable deck	IV	NSC	NSC
PROMT	Produces IMP-16 paper tape input to ROM	IV	NSC	NSC
PROM8	Produces IMP-8 paper tape input to ROM	IV	NSC	NSC

Program Name	Program Description	Support Code	Doc.	Program Location
	ROCKWELL INTERNATIONAL Library:			
PPSA	PPS-4 assembler	IV	R.I.	UPL
PPSO	PPS-4 output routine	IV	R.I.	UPL
PPSS	PPS-4 simulator	IV	R.I.	UPL
PPS8A	PPS-8 assembler	IV	R.I.	UPL
PPS8O	PPS-8 output routine	IV	R.I.	UPL
PPS8SM	PPS-8 simulator	IV	R.I.	UPL
PPSFIX	Program to modify simulator input file	IV	R.I.	UPL
PPSM	Prints map of used ROM locations	IV	R.I.	UPL

Program Name	Program Description	Support Code	Doc.	Program Location
	WINTEK library:			
CA6800	Motorola 6800 cross assembler	IV	#807	UPL
SM6800	Motorola 6800 simulator	IV	#690	UPL
PL6800	Motorola 6800 PL/W compiler	IV	#725	
LD6800	Motorola 6800 loader	IV	None	

LIB40 - SUBROUTINES FOR FORTRAN (II)

The following subroutines are available in the FORTRAN library in addition to the standard mathematical functions and include CALCOMP plotter routines. They are documented in the Addendum to FORTRAN IV (Pubs #105) and Language Bulletin #27 (Pubs #339).

Routine
Name   Routine Description

Routine Name	Routine Description
AXIS	Subroutine to draw, number, and label axes on the CALCOMP plotter
BYE	Subroutine to log user off system without TRU or terminal time printout
CONNEC	Function to return current connect time
DATE	Subroutine to return today's date in left-justified ASCII
DELET	Subroutine to delete a specified file
DUMP	Subroutine to dump particular portions of core
DYNARY	Subroutine to dynamically allocate array storage
ERRSET	Subroutine to allow user control of runtime mathematical error messages
EQ	Checks for equivalence of two ASCII arrays
EXIT	Subroutine to return control to monitor and thus terminate execution and file I/O
EXITPE	Subroutine to return control to the PERFORM file and thus terminate execution and file I/O
FILINF	Subroutine to return the protection of a file and check for its existence
IINDEX	Function that returns character location of any string within an array
INTDIS	Subroutine to disable interrupts
INTENA	Subroutine to enable interrupts
IROT	Function which performs cyclical rotation
GETBIT	Subroutine to return a specified bit of a word
GETBYT	Subroutine to return a specified byte of a word
GETC	Subroutine to retrieve a character from a word
LINE	Subroutine to draw a line between two points on CALCOMP plotter
LSH	Function to shift bits
LOGOUT	Subroutine to terminate output and log user off system
MAGDEN	Subroutine to allow user specification of magnetic tape density
NAMPPN	Subroutine to convert a user name to a ppn
NEXIT	Subroutine to exit from fortran without printing the word 'EXIT'
NUMBER	Subroutine to plot a floating point number on CALCOMP plotter
OFFINT	Returns interrupt control to the monitor
ONECHR	Subroutine to print a right-justified ASCII character on the user's terminal

Routine Name	Routine Description
ONINT	Specifies label to transfer to on interrupt
PDUMP	Subroutine to dump portions of core and return to program
PLOT	Subroutine to plot values on CALCOMP plotter
PLOTF	Subroutine to initialize program for off-line plotting with CALCOMP plotter
PLOTS	Subroutine to initialize common variables and turn on the CALCOMP plotter
POSITION	Function to return or set the position on a file opened for random access
PROJEC	Subroutine to return the current project code
PUTC	Subroutine to store a character in a word
RDTAPE	Paper tape input routine
RENAM	Subroutine to rename a file
RENAME	Subroutine to rename or delete a specified file
RTC	Subroutine to retrieve characters from a word
RUN	Subroutine to execute another core image program
SCALE	Subroutine to set scaling factor for CALCOMP plotting
SETBIT	Subroutine to set a specified bit of a word
SETBYT	Subroutine to set a specified byte of a word
SETRAN	Subroutine to initialize use of RAN function
SIMTTY	Subroutine to simulate terminal output on a file
SIZE	Function to return the size of a random file
SLITE	Subroutine to turn sense lights on or off
STC	Subroutine to store characters into a word
SYMBOL	Subroutine to draw a single or string of characters on a CALCOMP plotter
USERNA	Subroutine to return the user name associated with the current job
TIME	Subroutine to return current time as left-justified ASCII characters
TIMER	Subroutine to allow user to specify maximum cpu time before terminating execution
TRU	Function to return current TRU time expended
TRULIMIT	Subroutine to set a TRU limit in a program
WAIT	Subroutine to suspend execution for a defined period of time
WHERE	Subroutine to return the pen location and multiplying factor for the CALCOMP plotter

<u>XLIB</u> - <u>SUBROUTINES</u> <u>FOR</u> <u>FORTRAN</u> <u>(II)</u>

This library of FORTRAN utility subroutines, located in the User Program Library (UPL), can be loaded along with the user's main program and subroutines by including "(UPL)XLIB/LIB" in the COMPILE, LOAD, or EXECUTE command. Documentation is printed in Product Supporter, Issue 3, page 26. Copies may be obtained from your local Tymshare office.

Routine Name	Routine Description
ASCSIX	Converts ASCII to SIX-BIT
AUXSET	Sets terminal characteristics
BETA	Computes BETA distribution based on Gaussian quadrature
CLRBFI	Clear terminal input buffer
CLRBFO	Clear terminal output buffer
CORFIL	Performs core UUO
CPRINT	Prints a single ASCII character on the terminal
DOLLAR	General purpose comma formatting routine
DTE	Returns current date as MMDDYY
ECHO	Turns terminal echo on or off
EDITOR	Starts up and transfers control to EDITOR
FILSIZ	Returns the size of the specified file
FSPEC	Returns file directory information
GETLIN	Returns line status word
GETPPN	Returns user's PPN
GETUSN	Returns user's username
HDX	Sets half duplex mode
IAND	Performs logical AND of two arguments
ICHAR	Gets the Nth character from a string
IFF	Compares two real numbers for approximate equality
IFTYP	Performs a table look-up on a 5-character input string
INFO	Text retrieval based on key word search
IOR	Performs logical OR of two arguments
ITAB	Accesses GETTAB monitor tables
IWAIT	Terminates job execution for a specified time
IXOR	Performs EXCLUSIVE OR of two arguments
LINEP	Checks to see if a line has been typed
LOCF	Returns absolute core address of argument
MINFO	Same as INFO but from different username
MOVE	Copies one array to another
MPLOT	Plots multiple curves on one axis on the terminal
MSG	Types message on terminal
NOCRLF	Performs TTY NO CRLF
NTRU	Returns number of TRU's since log in
OFFLC	Turns off lowercase transmission
ONCRLF	Performs TTY CRLF
ONLC	Turns on lowercase transmission
OUTSTR	Types a character string on the terminal

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PACK      Packs an alpha array from Al format to A5 format
PERFORM   Subroutine to modify running PERFORM file
PLOT      Subroutine to perform terminal plotting
SEC       Returns number of seconds since midnight
SETLIN    Changes line characteristics
SIXASC    Converts SIX-BIT to ACSII
TEL       Checks terminal input buffer for characters
TIO       Starts up and transfers control to the TIO program
TTCHAR    Inputs a single character from the terminal
TTYFORM   Performs a TTY FORM
TYTLE     Punches a readable title on a paper tape
XPRINT    Performs eight-level (binary) output
```

COMAND - SUBROUTINES FOR FORTRAN COMMAND PACKAGE (III)

A FORTRAN subroutine command package consisting of various utility command-oriented subroutines has been compiled and made available in the file (UPL)COMAND.REL. A manual describing how to use these routines is available in the TYMCOM-X Information Notebook.

Routine Name	Routine Description
COMMAND	Subroutine to scan for a command
DELIMI	Function to test for a delimiter
DFILE	Subroutine to scan for a file name
ERROR	Subroutine used after unsuccessful line scan
ERRPNT	Subroutine to print an up arrow at location of error in input line scan
FBREAK	Subroutine to disassemble a file name into its component parts
FILDEOL	Subroutine to scan for a valid file name
FILE	Subroutine to scan for a remote file name
GETSTR	Subroutine to get an arbitrary string of characters from the input line
ICHAR	Function to get the Nth character from a string
INTEGER	Subroutine to scan for an integer
KOM	Similar to COMMAND
LCH	Function to get a particular character in a specified list and entry
LENTRY	Subroutine to list a specified command entry in a specified list on a given FORTRAN unit number
LINERE	Complement to LINESAVE for insertions
LINESAVE	Subroutine to save the input line
LOCF	Subroutine to return the absolute core address of argument
NEWLINE	Subroutine to get a new line of data
NEWLIX	Subroutine to input a new line of information
NEXTCHR	Subroutine to get the next character in the input line
NOWCHR	Subroutine to get the current character in the input line
NUMBER	Subroutine to scan for a number
OCTAL	Subroutine to scan input line for an octal integer
WRINLIN	Subroutine to write part or all of the input line on the user's terminal or on a specified FORTRAN unit number

PROGRAM ACCESS

Program names which are underlined may be executed simply by typing
their name followed by a carriage return at XEXEC command level,
signified by the -(dash) prompt.

For example:

        -DEFER<CR>

Program names which are not underlined may be accessed in any of several
ways, depending on the type of file or program that is desired.
Executable programs are accessed by typing one of the following:

        R program name

For example:

        -R PERP<CR>

        R (program location)program name

For example:

        -R (UPL)X22<CR>

To access subroutine libraries, such as XLIB, you can include the
following with any compile class command.

        (program location)program name/LIB

For example:

        -EXECUTE MYPROG,(UPL)XLIB/LIB

SOFTWARE SUPPORT CLASSIFICATION

The following is a description of the support code assigned to various programs on the TYMCOM-X system.

Class I   These programs are fully tested and supported. Detailed functional and technical expertise and formal documentation are available from Tymshare or a Tymshare supplier. Support or enhancements requested for these products will be given top priority. Training is likely to be available from Tymshare or a Tymshare supplier.

Class II   Support for these programs is limited by resource availability. Detailed functional and technical expertise may not be available at Tymshare but can often be obtained through the software supplier. Documentation is available from Tymshare or a Tymshare supplier. No Tymshare training classes are offered. Special support or enhancement requests will be reviewed periodically.

Class III These are programs for which Tymshare provides no support. Some of these programs are very useful, and Tymshare makes them available for the convenience of our customers, but for various reasons Tymshare does not accept responsibility for program integrity. Documentation may be incomplete. Program testing is limited to verifying accessibility. Support requests will not be accepted on these programs.

Class IV   These are vendor supplied and supported programs. Detailed functional and technical expertise may not be available from Tymshare but is available from the vendor. Documentation is available from the vendor or Tymshare. No Tymshare training classes are offered. Special support or enhancement requests will be reviewed periodically.

SUPPORT DOCUMENTATION

The following list provides an explanation of the column entitled Support Documentation.   These documents are available through Tymshare upon request.

Support
Document
Abbr.   Document Name or Document Source
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COMARC   Documentation provided through COMARC Design Systems
DEC   Documentation provided through Digital Equipment Corporation
                  West Coast: Digital Equipment Corp.
                                    1400 Terra Bella
                                    Mountain View, Ca.   94040
                  East Coast: Digital Equipment Corp.
                                    P.O. Box F
                                    Maynard, Mass.   01754
DECUS   Digital Equipment Computer Users Society
               Program Library
BSO   Documentation provided through Boston Systems Office, Inc.
INTEL   Documentation provided through INTEL Corporation
NSC   Documentation provided through National Semiconductor
R.I.   Documentation provided through Rockwell International
TEK   Documentation provided through TEKTRONIX Incorporated
TIN   TYMCOM-X Information Notebook
Self   Program contains a standard front end documenting its
               operation.
XEXEC   Documentation is provided in the Tymshare
               XEXEC Manual, Pubs #321.
TYM-IX   Documentation is provided in the TYMCOM-IX
               EXECUTIVE Manual, Pubs #100.
None   No documenation is available from Tymshare
Rough   Documentation is in a draft state at
               the current time and is available upon special
               request only.
#nnn   This is Tymshare's Pubs number indicating that the
               document may be ordered directly from Publications.
See <program> This software is documented in conjunction
               with the program <program>.

I N D E X