

Series 32000

Software
Catalog

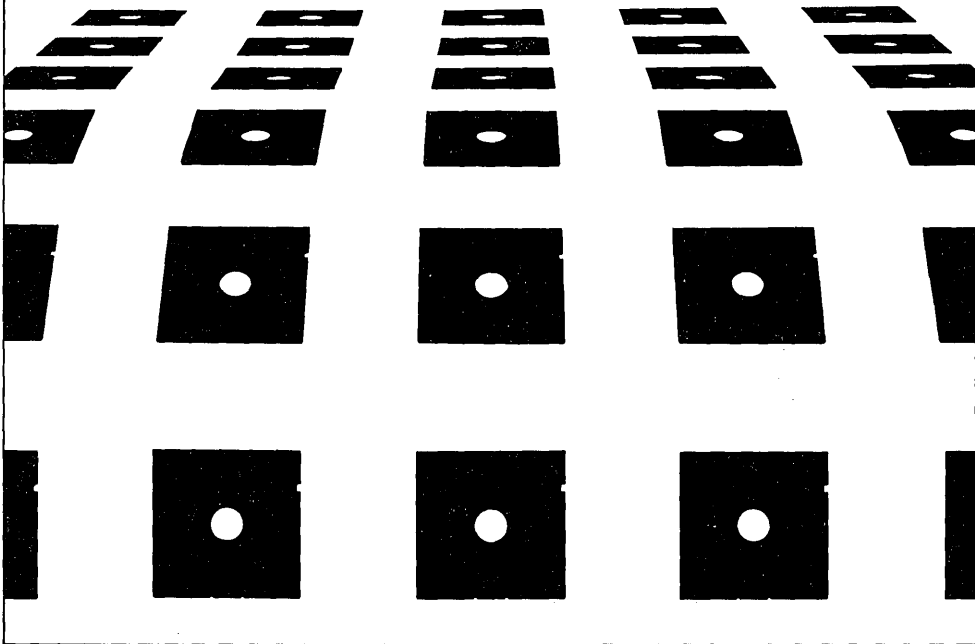


*Featuring
Independent
Software
Vendors*

Series 32000

Software
Catalog

*Featuring
Independent
Software
Vendors*



 National
Semiconductor
Corporation



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Introduction

Welcome to the exciting world of software products for National's advanced 32-bit Microprocessor family, Series 32000. We have recently renamed our 32-bit microprocessor products from the NS16000 family to Series 32000. This program was effective immediately following the signing of Texas Instruments, Inc. as our second source for the Series 32000.

National has undertaken the responsibility to implement these changes and corresponding references throughout this catalog. Note, however, that a number of Independent Software Vendor's Product's Names still reference 16000. We did not attempt to change any "product names" other than our own. Those product names will be reviewed and corrected to reflect Series 32000, by each ISV, for the next edition of the catalog.

Each CPU version in the Series 32000 has the same internal 32-bit architecture and compatible instruction sets. This means that software written for, or ported to, any Series 32000 CPU is both upward and downward compatible.

This compatibility protects our customer's software equity and provides a growth path for upgrading their products.

As a result, the Independent Software Vendor (ISV) can provide solutions to customer software problems by offering the same software package independent of the particular Series 32000 CPU.

This software catalog was created to organize, maintain, and disseminate Series 32000 software information. It includes the software vendor, contact information, and product data for each product.

The catalog is organized by company and by product. There are various indices and cross-references by software type and over 100 pages of product data in alphabetical order by company.

To obtain further information on any product contained in this catalog, please contact the software vendor directly, as shown on the product Data sheet.

Please be advised that NSC publishes submitted data as it is received; in this catalog, no products other than our own have been analyzed or evaluated. National makes no warranties or representations of any kind with regard to the quality, functionality, or execution of the products described herein. In no event will National be liable for any incidental or consequential damages arising out of the application or use of any product described herein.

ISV Acknowledgement

I would like to personally thank you for your cooperation in making this publication possible, and to wish you great success in marketing the products listed in this catalog as well as in new product development. ISVs are, and will continue to be, very valuable to the overall Series 32000 program.

As mentioned in the introduction, we have recently renamed our 32-bit microprocessor products from the NS16000 family to Series 32000. National undertook the responsibility to implement these changes and corresponding references throughout this catalog. However, we did not attempt to change any of the actual ISV's Software Product names.

Several of the software products throughout either used or referenced the 16000 in the product name. I ask each of you that this applies to, to rename your product accordingly. Now, when we speak of our technologically

advanced 32-bit microprocessor family, it is referred to as Series 32000. You have several months to rename your products for the next edition of the software catalog.

While every reasonable effort has been made to ensure that the contents of this catalog conform to the product descriptions submitted, we cannot be held responsible for inadvertent errors. If you feel that there is a mistake, or that a trademark or copyright has not been accurately credited, please contact us at the address below.

Software products, which directly relate to or interface with the Series 32000 family, and which do not currently appear in this catalog may be submitted for consideration in the next issue.

Please write or call for details and to request the appropriate software product submission forms. Comments are also welcome.

Sincerely,



Bill Slusher
ISV Senior Program Manager
National Semiconductor
2900 Semiconductor Drive
M/S 16-172
Santa Clara, CA 95051
(408) 721-5554

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Series 32000 Software Cross Reference Chart

Series 32000
Operating Systems

Implementation Language

	Page No.	GENIX	UNIX 4.1 bsd	UNIX 4.2 bsd	UNIX Environment	UNIX SYSTEM III	C-EXEC	PVS	TILIOS	S1	C	Pascal	FORTRAN	COBOL	FORTH	Modula-2	LISP	Prolog	ALGOL	BCPL	AVL	SMPLE	ISIL	SL	IMP	
Word Processing:																										
Computer Methods—XED Doc. Proc.	17	○	●	●	●	●					●															
Elite—POET Text Editor	29							●															●			
Eris—TQX Text Editor	36								●															●		
Horizon—Horizon Word Processor	38	○	●	●	●						●															
Quadratron—Q-OFFICE—Mgmt. Sys.	97	○	●	●	●	●					●															
Syntactics—CrystalWriter Word Proc.	116	●			●						●	●														
Topexpress—Scientific Word Proc.	124																				●					
Data Base Mgmt. Systems:																										
Computer Methods—XED Forms Mgr.	18	○	●	●	●	●					●															
Eris—Bini-DBMS	33								●															●		
Multinational—/rdb DBMS	60	●			●						●															
Oracle—Oracle DBMS	83	●			●						●															
PHACT—PHACT dbrm	84	○			●						●															
Procedamus—DBMS	88	○			●																					
Software Innovations—vf (Forms/Screen Mgr.)	111	●			●						●															
Unicomp—UniMerge (File Mgr.)	126	○			●						●															
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Austec—CUE (Comm. UNIX Environment)	14	○			●						●		●													
CCA—EMACS (Screen Editor)	16	●			●						●															
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Unicomp—Unigen (Appl. Gen.)	125	○			●						●															
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KEY:

- = Yes, per data submitted by ISV.
- = Probability high — can be ported easily.

Series 32000 Software Cross Reference Chart

Series 32000
Operating Systems Implementation Language

	Page No.	GENIX	UNIX 4.1 bsd	UNIX 4.2 bsd	UNIX Environment	UNIX SYSTEM III	C-EXEC	PVS	TILIOS	S1	C	Pascal	FORTAN	COBOL	FORTH	Modula-2	LISP	Prolog	ALGOL	BCPL	AVL	SMPL	ISIL	SL	IMP	
Financial/Calc's:																										
Olympus—UltraCalc	82	●		●							●															
Quality Software—Q-CALC	99	○	●	●	●	●					●															
Software Innovations—vc	110	●		●							●															
Compilers:																										
C:																										
Univentures—Green Hills C	135	●		●								●														
Multi Solution—S1 C	62									●															●	
National Semiconductor—C	76	●									●															
SVS—C	101	●		●								●														
Tartan—C	117	●	●	●	●																					
Pascal:																										
ACT—Pascal	12			●								●														
Elite—WR Pascal	31							●				●														
Univentures—Green Hills Pascal	138	●		●								●														
Lattice Logic—Pascal	51																								●	
Multi Solution—S1 Pascal	65									●															●	
SVS—Pascal	103	●		●								●														
Modula-2:																										
Elite—Modula-2	28							●									●									
Innervision—Modula-2	42											●														
Tartan—Modula-2	118	●	●	●	●																					
COBOL:																										
ACT—COBOL 74	10			●								●														
MicroFocus—COBOL	56	●	●											●												

Continued next page.

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Series 32000 Software Cross Reference Chart

Series 32000
Operating Systems Implementation Language

	Page No.	GENIX	UNIX 4.1 bsd	UNIX 4.2 bsd	UNIX Environment	UNIX SYSTEM III	C-EXEC	PVS	TILIOS	S1	C	Pascal	FORTRAN	COBOL	FORTH	Modula-2	LISP	Prolog	ALGOL	BCPL	AVL	SMPL	ISIL	SL	IMP	
Compilers (Cont'd):																										
<i>FORTRAN:</i>																										
ACT—FORTRAN	11			●								●														
Univentures—Green Hills FORTRAN	137	●		●								●														
Multi Solution—S1 FORTRAN	63									●															●	
SVS—FORTRAN	102	●		●								●														
Topexpress—FORTRAN	123	○		●																●						
<i>BASIC</i>																										
Databoard—DBASIC	20	○	●	●							●															
Multi Solution—S1 BASIC	61									●															●	
Software Innovations—BASIC-L	109	●		●							●															
SVS—BASIC + INTERP	100	●		●							●															
<i>LISP</i>																										
Elite—LISP	27						●																●			
Symmetric—LISP/16000	115	●									●						●									
<i>Other Compilers:</i>																										
Elite—SMPL-II	32						●																●			
Eris—ISIL	34								●															●		
MIPS—DIALOG APL	59	●	●	●	●						●															
Software Innovations—AVL	108	●		●							●										●					
Symmetric—Prolog/16000	115	●									●						●									
Topexpress—ALGOL	120	○		●																●						
Topexpress—BCPL	122	○		●																●						
Unified—UNIFORTH	130													●												
<i>Assemblers:</i>																										
Kent State Univ.—16000 ASMBLR	49	○		●							●															
Symmetric—16000 ASMBLR	114	●		●							●															

KEY:

- = Yes, per data submitted by ISV.
- = Probability high — can be ported easily.

Accugraph Corporation

Courtyard, 112 Merton Street
Toronto, Ontario, Canada

Contact:

Craig P. Curran, Vice President
416/482-7008

ACCU/CAD 2-D Computer Aided Design & Drafting

Description:

Computer Aided Design &
Drafting for general purpose
drafting

Host H/W:

VAX, PRIME

Host S/W:

VMS/UNIX/PRIMOS

Target H/W:

Series 32000-based systems

Target S/W:

UNIX 4.2 bsd and System V

Language:

FORTRAN 77

Interface/Compatible with other National Software?

Yes, product will run under the
GENIX operating system.

Availability Date:

28 February 1984

Key Product Features:

- Menu-driven (screen and tablet)
- Choice of peripherals
- Device independent
- 3-D data base and graphics primitives
- Interface to other third party software

Key Product Benefits:

- Increase productivity
- Improve quality of Engineering drawings
- Can use latest in hardware technology
- Choice of plotters, digitizers, etc. to minimize costs
- System can be tailored to specific needs
- Multifunctional operations

Advanced Computer Techniques Corporation

16 East 32nd Street
New York City, NY 10016

Contact:

George Finckenor, Marketing Manager
212/696-3600

ACT ANSI COBOL 74 Compiler

Description:

A full FIPS High Level COBOL Compiler implemented to ANSI Standard X3.23-1974

Host H/W:

Series 32000 line of microprocessors

Host S/W:

UNIX

Target H/W:

Series 32000 line of microprocessors

Target S/W:

UNIX

Language:

Pascal

Availability Date:

23 February 1984

Key Product Features:

- Written in Pascal
- Transportable to other hosts (IBM, VAX, etc.) for use as a cross compiler
- Not available directly to end users
- Inquiries from equipment manufacturers, OEMs and distributors are invited.

Key Product Benefits:

- Excellent documentation includes source code, reference and internal manuals.

Advanced Computer Techniques Corporation

16 East 32nd Street
New York City, NY 10016

Contact:

George Finckenor, Marketing Manager
212/696-3600

ACT ANSI FORTRAN 77 Compiler

Description:

A full ANSI (X3.9-1978)
FORTRAN 77 Compiler with
optional MIL-STD 1753 extensions

Host H/W:

Series 32000 line of
microprocessors

Host S/W:

UNIX

Target H/W:

Series 32000 line of
microprocessors

Target S/W:

UNIX

Language:

Pascal

Availability Date:

23 February 1984

Key Product Features:

- Written in Pascal
- Transportable to other hosts (IBM, VAX, etc.) for use as a cross compiler
- Not available directly to end users
- Inquiries from equipment manufacturers, OEMs and distributors are invited

Key Product Benefits:

- Excellent documentation includes source code, reference and internal manuals.

Advanced Computer Techniques Corporation

16 East 32nd Street
New York City, NY 10016

Contact:

George Finckenor, Marketing Manager
212/696-3600

ACT Pascal Compiler

Description:

A Pascal Compiler which is a superset of the ANSI/IEEE/ISO standards

Host H/W:

Series 32000 line of microprocessors

Host S/W:

UNIX

Target H/W:

Series 32000 line of microprocessors

Target S/W:

UNIX

Language:

Pascal

Availability Date:

23 February 1984

Key Product Features:

- Written in Pascal
- Transportable to other hosts (IBM, VAX, etc.) for use as a cross compiler
- Not available directly to end users
- Inquiries from equipment manufacturers, OEMs and distributors are invited

Key Product Benefits:

- Excellent documentation includes source code, reference and internal manuals

Advanced Computer Techniques Corporation

16 East 32nd Street
New York City, NY 10016

Contact:

George Finckenor, Marketing Manager
212/696-3600

ACT Pascal Cross Compiler

Description:

A superset of ANSI/IEEE/ISO Pascal for cross compiling from a VAX environment to a Series 32000-based target machine

Host H/W:

VAX

Host S/W:

VMS or 4.1 based UNIX

Target H/W:

Series 32000-based
microcomputers

Target S/W:

UNIX

Language:

Pascal

Availability Date:

23 February 1984

Key Product Features:

- Written in Pascal
- Transportable to other hosts
- Not available directly to end users
- Inquiries from equipment manufacturers, OEMs and distributors are invited

Key Product Benefits:

- Excellent documentation includes source code, reference and internal manuals

Austec, Inc.

2099 Gateway Place
San Jose, CA 95110

Contact:

Maynard Evans, Director of Sales
408/554-6505

Commercial UNIX Environment (CUE)

Description:

Product gives end user a complete business package, filing system, generator, compiler, run-time system and other COBOL compatibility.

Host H/W:

Any hardware which supports C compiler

Host S/W:

GENIX, UNIX (or UNIX look-alike)

Target H/W:

Series 32000-based systems

Target S/W:

GENIX or any operating system supporting C

Language:

C and COBOL

Availability Date:

15 March 1984

Key Product Features:

- Compatible with all Data General software
- Compatible with Ryan MacFarland, Microsoft, Microfocus COBOL
- Has fourth-generation programming tool for consistent error-free documented business programs
- Independent file system callable from C

Key Product Benefits:

- Business user has thousands of applications programs to choose from and run unaltered.
- User may easily and quickly create business applications programs.
- File system links data to FORTRAN, COBOL, Pascal, etc.
- Company provides direct support to hardware manufacturer to help sell hardware.
- This product is only marketed to manufacturers or hardware O.E.M.s. COBOL is high intermediate.

Clinical Data Design

4718 W. Lisbon
Milwaukee, WI 53208

Contact:

Kaye Hafemann, Marketing
414/444-9900

MDX

Description:

A complete medical software package that includes billing, insurance claim preparation, appointment and medical record functions.

Host H/W:

Altos, Fortune, Onyx, NCR, DEC, Intel

Host S/W:

UNIX Version 7, System III and V, XENIX

Target H/W:

All standard UNIX-based computers

Target S/W:

The UNIX environment

Language:

C

Availability Date:

1 March 1984

Key Product Features:

- Software interactive in 3 areas, Financial, Appointments and Medical History
- User controlled Report Generator
- Software written in C
- Full multiuser and multitasking
- Extremely user friendly

Key Product Benefits:

- Portable among UNIX computers
- Designed to aid the user and eliminate operator frustration
- Better financial management of the clinic results in more profitability

Computer Corporation of America

Four Cambridge Center
Cambridge, MA 02142

Contact:

Steven Zimmerman, Product Manager
617/492-8860

CCA EMACS

Description:

Advanced, self-documenting,
customizable screen editor

Host H/W:

N/A

Host S/W:

N/A

Target H/W:

Series 32000-based systems

Target S/W:

GENIX/UNIX

Language:

C

Interface/Compatible with other National Software

Yes, runs under GENIX

Availability Date:

Now

Key Product Features:

- Supports multiple text buffers and screen windows
- Program modes for C, Lisp, and Ada
- Interactive spelling checker and corrector
- Ability to run a shell and subprocesses in a buffer
- Directory editor included

Key Product Benefits:

- Easy to learn, with many levels of documentation
- Powerful command set reduces time required for editing tasks
- Many files can be edited and viewed simultaneously
- Arbitrary UNIX filters can be used to process text in buffers
- Completely compatible with original MIT EMACS
- Can be easily customized by individual users

Computer Methods Limited

Box 709
Chatsworth, CA 91311

Contact:

Ted Ferguson,
National Sales Manager
818/884-2000

XED Document Processing System

Description:

A full screen "what you see is what you get" word processing system, comparable to top class standalone word processors in a high performance multi-user UNIX environment

Host H/W:

ALTOS, ONYX, VAX, PLEXUS,
Sun, Cadmus, etc.

Host S/W:

UNIX Version 7, System III, V,
Berkeley 4.1, 4.2

Target H/W:

Series 32000-based systems

Target S/W:

UNIX Version 7, System III, V,
Berkeley 4.1, 4.2

Language:

C

Availability Date:

Now

Key Product Features:

- Full cursor control during text entry
- On screen formatting on text entry wrap, justification, etc., toggle on/off
- Imbedded interactive spelling with local, global dictionaries
- Automatic hyphenation, paragraph outlining, footnoting
- Paragraph and phrase glossaries for often used words or whole subdocuments

Key Product Benefits:

- Very rich in features yet high multi-user performance
- Fully implemented in C portable to all UNIX systems
- Integrated with menu processor and data entry products
- Mature stable product

Computer Methods Limited

Box 709
Chatsworth, CA 91311

Contact:

Ted Ferguson,
National Sales Manager
818/884-2000

XED Forms Management System

Description:

Forms generation provides interactive forms design for data entry in database applications. Includes database creation.

Host H/W:

ALTOS, ONYX, VAX, PLEXUS, Sun, Cadmus, etc.

Host S/W:

UNIX Version 7, System III, V, Berkeley 4.1, 4.2

Target H/W:

Series 32000-based systems

Target S/W:

UNIX Version 7, System III, V, Berkeley 4.1, 4.2

Language:

C

Availability Date:

Now

Key Product Features:

- Cross field numeric and string calculations
- Key field definition
- Choice of invoicing or record keeping modes
- Operator input of mandatory fields, skip fields
- Field verification by sight, reentry, max/min range or a list

Key Product Benefits:

- Fast, simple creation of forms and database
- Each record may have up to 500 fields of 50 characters per field.
- Financial analysis can be performed by modification of formula.
- Data files may be created by external database manager.
- May be used for direct key to disk data entry, producing ASCII flat files which may be read by database manager programs.

Computer Methods Limited

Box 709
Chatsworth, CA 91311

Contact:

Ted Ferguson,
National Sales Manager
818/884-2000

XED Menu Processor

Description:

Places all required office automation functions in a single menu driven login shell thus isolating UNIX from office personnel

Host H/W:

ALTOS, ONYX, VAX, PLEXUS, Sun, Cadmus, etc.

Host S/W:

UNIX Version 7, System III, V, Berkeley 4.1, 4.2

Target H/W:

Series 32000-based systems

Target S/W:

UNIX Version 7, System III, V, Berkeley 4.1, 4.2

Language:

C

Availability Date:

Now

Key Product Features:

- Multi-level menus
- Fully recursive
- Multiple prompts for each input option
- Menu traversing from any point to any point

Key Product Benefits:

- Fast execution
- Simple implementation and modification
- Integrates with any applications
- Displays standard directory with file selection by cursor keys
- Includes standard directory housekeeping, file add, delete, copy, etc.

Databoard, Inc.

550 Pilgrim Drive
Foster City, CA 94404

Contact:

Lars Karlsson, President
415/571-8811

DBASIC

Description:

An advanced, structured BASIC written in C for UNIX systems

Host H/W:

N/A

Host S/W:

N/A

Target H/W:

Series 32000-based systems

Target S/W:

UNIX, 4.2 bsd, DNIX, XENIX

Language:

C

Interface/Compatible with other National Software?

Yes, it will port to National Semiconductor software.

Availability Date:

29 February 1984

Key Product Features:

- Long variables
- Multi-line IF . . . THEN . . . ELSE
- Multi-line recursive functions
- Open pipe statements
- IEEE standard floating point arithmetic
- Local function variables
- B-TREE ISAM option
- Time and date function
- Multi-dimensional arrays

Key Product Benefits:

- Has unlimited string lengths which makes programming easier
- Graphics capabilities
- Contains no Western Electric Code, no Western Electric licensing
- Not just a revised BASIC, but actually devised from scratch

Databoard, Inc.

550 Pilgrim Drive
Foster City, CA 94404

Contact:

Lars Karlsson, President
415/571-8811

DNIX

Description:

A powerful real-time multi-processor, multi-user operating system with complete support of all UNIX kernel features

Host H/W:

N/A

Host S/W:

N/A

Target H/W:

Series 32000-based systems

Target S/W:

N/A

Language:

C

Interface/Compatible with other National Software?

Yes, software which is portable to UNIX and UNIX-like environments will run under DNIX.

Availability Date:

29 February 1984

Key Product Features:

- Real-time extensions
- Dynamic allocation of file index records
- Able to allocate contiguous files
- Able to lock processes in memory
- TRAP queues
- User configurable block size
- High reliability disk management
- SPAWN system call (FORK/EXEC)

Key Product Benefits:

- User configurable operating environment making it unnecessary to recompile
- Written in C
- No Western Electric code, no Western Electric licensing
- Currently compatible with UNIX V7 and XENIX
- Easy to implement complex communication software
- Multi-keyed B-TREE ISAM

The Destek Group

830 East Evelyn Avenue
Sunnyvale, CA 94086

Contact:

Dennis Rieger, Marketing Mgr.
408/737-7211

DEBUG/RT

Description:

Advanced software debugger for OS/RT, Destek's Real Time O.S. and other popular operating systems

Host H/W:

Z8000; M68000; 8086

Host S/W:

N/A

Target H/W:

All Series 32000-based systems

Target S/W:

OS/RT, Destek's Real Time O.S. Kernel + others (contract)

Language:

C

Interface/Compatible with other National Software?

Yes. The additional software modules and tools available from Destek for National hardware.

Availability Date:

60 day delivery

Key Product Features:

- Break point control
- Symbolic debugging
- Register setting and display
- Symbol value list and single step execution
- Complete symbol management and full expression analyzer

Key Product Benefits:

- Quickly and accurately locate program bugs
- Increase reliability and reduce maintenance of Real Time applications
- Written in C
- Source is available
- ROMable

The Destek Group

830 East Evelyn Avenue
Sunnyvale, CA 94086

Contact:

Dennis Rieger, Marketing Mgr.
408/737-7211

ON/NET Local Area Networking

Description:

Provides networking interface and device driver software to implement LAN under OS/RT, Destek's Real Time O.S. Kernel

Host H/W:

VAX/Micro VAX, PDP11, LSI11;
DG Nova/Eclipse; 68000;
8086/88/186; Z80, Z8000

Host S/W:

N/A

Target H/W:

All Series 32000-based systems

Target S/W:

OS/RT, Destek's Real Time O.S. Kernel

Language:

C

Interface/Compatible with other National Software?

Yes. The additional software modules and tools available from Destek for National hardware.

Availability Date:

2Q 1984

Key Product Features:

- High level network interface and device driver software
- Compatible with Destek's OS/RT Real Time executive
- Compatible with Destek's DESNET Local Area Network
- Written in C
- Available in binary or source form

Key Product Benefits:

- Transparent communication between tasks on separate processors
- Integrated networking solution for distributed Real Time applications
- Available as turnkey system or building block
- ROMable
- Fully transportable

The Destek Group

830 East Evelyn Avenue
Sunnyvale, CA 94086

Contact:

Dennis Rieger, Marketing Mgr.
408/737-7211

OS/RT Hierarchical File System

Description:

A superset of the UNIX style hierarchical file system with expanded directory functions. For use with OS/RT, Destek's Real Time O.S.

Host H/W:

VAX/Micro VAX, PDP11, LSI 11;
DG Nova/Eclipse; 68000;
8086/88/186; Z80, Z8000

Host S/W:

N/A

Target H/W:

All Series 32000-based systems

Target S/W:

OS/RT, Destek's Real Time O.S.
Kernel

Language:

C

Interface/Compatible with other National Software?

Yes. The additional software modules and tools available from Destek for National hardware.

Availability Date:

2Q 1984

Key Product Features:

- Superset of UNIX style hierarchical file system
- Separation of directory and data files
- Compatible with Destek's OS/RT Real Time executive
- Written in C
- Available in binary or source form

Key Product Benefits:

- Sophisticated hierarchical file system for Real Time applications
- Available as turnkey package or building block
- ROMable
- Fully transportable

The Destek Group

830 East Evelyn Avenue
Sunnyvale, CA 94086

Contact:

Dennis Rieger, Marketing Mgr.
408/737-7211

OS/CLI Command Line Interpreter

Description:

Provides operator interface that controls process execution in OS/RT, Destek's Real Time O.S. Kernel

Host H/W:

VAX/Micro VAX, PDP11, LSI11;
DG Nova/Eclipse; 68000;
8086/88/186; Z80, Z8000

Host S/W:

N/A

Target H/W:

All Series 32000-based systems

Target S/W:

OS/RT, Destek's Real Time O.S. Kernel

Language:

C

Interface/Compatible with other National Software?

Yes. The additional software modules and tools available from Destek for National hardware.

Availability Date:

2Q 1984

Key Product Features:

- UNIX-like interface
- Compatible with Destek's OS/RT Real Time executive
- Written in C
- Available in binary or source form

Key Product Benefits:

- Familiar UNIX interface for Real Time O.S.
- Available as turnkey package or building block
- ROMable
- Fully transportable

The Destek Group

830 East Evelyn Avenue
Sunnyvale, CA 94086

Contact:

Dennis Rieger, Marketing Mgr.
408/737-7211

OS/RT Real Time Operating System Kernel

Description:

Real Time, multi-tasking, interrupt-driven operating system Kernel that is written in C and is fully transportable (ROM or disk based)

Host H/W:

VAX/Micro VAX, PDP11, LSI11;
DG Nova/Eclipse; 68000;
8086/88/186; Z80, Z8000

Host S/W:

N/A

Target H/W:

All Series 32000-based systems

Target S/W:

N/A

Language:

C

Interface/Compatible with other National Software?

Yes. The additional software modules and tools available from Destek for National hardware.

Availability Date:

Now

Key Product Features:

- Real Time
- Multi-tasking
- Interrupt-driven
- Written in C
- Available in binary or source form

Key Product Benefits:

- Very fast
- Fully transportable
- No practical limit on the # of events, interrupts, tasks, channels (2^{32})
- Available as turnkey system or building block set
- ROMable
- Expandable into full Real Time O.S. (multi-user, multi-processor, etc.)

Elite Corporation

4129 May St.
Wichita, KS 67209

Contact:

Steve Keller, Sales Manager
316/942-6619

LISP

Description:

LISP language system for Series 32000

Host H/W:

Elite Consultant Series 32000 desktop computer system

Host S/W:

Series 32000-based computer systems

Target H/W:

Series 32000-based computer systems

Target S/W:

PVS

Language:

SMPL

Availability Date:

Call

Key Product Features:

- Compatible with the Portable LISP Compiler (PSL)
- Very portable language system

Key Product Benefits:

- Development and support of LISP applications on low cost hardware

Elite Corporation

4129 May St.
Wichita, KS 67209

Contact:

Steve Keller, Sales Manager
316/942-6619

Modula-2

Description:

A compiler, linker, loader, debugger and utilities to support the Modula-2 programming language.

Host H/W:

Elite Corporation Series 32000
Consultant computer system

Host S/W:

PVS Operating System

Target H/W:

Series 32000-based computer
system

Target S/W:

PVS or similar operating systems

Language:

Modula-2

Availability Date:

1 March 1984

Key Product Features:

- 32-bit implementation
- Symbolic debugger
- Hardware floating point support
- Utilizes the mature SMPL optimizer technology for code generation
- Separate compilation

Key Product Benefits:

- Information hiding
- High execution speed
- Ease of maintenance

Elite Corporation

4129 May St.
Wichita, KS 67209

Contact:

Steve Keller, Sales Manager
316/942-6619

POET Text Editor

Description:

POET is a mature text editing system primarily designed to support software and documentation generation.

Host H/W:

Elite Consultant Series 32000 desktop computer system

Host S/W:

PVS

Target H/W:

Series 32000-based computer systems

Target S/W:

PVS

Language:

SMPL

Availability Date:

1 March 1984

Key Product Features:

- Full screen editing
- Auto indenting mode
- Extensible
- Word wrap with justification
- Global multiple find/replace
- Block overlaying/offsetting
- File Merge and extraction
- External file review
- O.S. access
- Checkpointing

Key Product Benefits:

- Excellent aid for program development and documentation support
- Provides word processing features suitable for clerical and office work
- User definable commands for expansion of capabilities

Elite Corporation

4129 May St.
Wichita, KS 67209

Contact:

Steve Keller, Sales Manager
316/942-6619

PVS Operating System

Description:

PVS (Portable Virtual System) is a realtime, virtual memory operating system which supports multiple processors in a multitasking, multiuser environment. PVS is written entirely in the SMPL system language and is portable across a wide variety of hardware architectures.

Host H/W:

Elite Consultant Series 32000
desktop computer system

Host S/W:

N/A

Target H/W:

Series 32000-based computer
systems

Target S/W:

N/A

Language:

SMPL II

Interface/Compatible with other National Software?

Yes, programs written in Pascal,
C and Assembler should be
reasonably portable to and from
the Series 32000 systems.

Availability Date:

1 March 1984

Key Product Features:

- Multiple processor
- Multi-user, multi-tasking
- Realtime control
- Demand paged virtual memory
- Hierarchical file system with
file and record locking
- Device independent I/O
- Dynamically installable device
drivers
- Queues for message passing
and interfacing
- PCL command language
- Disk cacheing

Key Product Benefits:

- Written in SMPL system
language
- Very portable
- Source code available
- Very easily user configurable
and expandable

Elite Corporation

4129 May St.
Wichita, KS 67209

Contact:

Steve Keller, Sales Manager
316/942-6619

WR Pascal

Description:

An ISO standard Pascal compiler

Host H/W:

Elite Corporation Series 32000
Consultant computer system

Host S/W:

PVS Operating System

Target H/W:

Series 32000-based computer
system

Target S/W:

PVS or similar operating systems

Language:

Pascal

Availability Date:

1 March 1984

Key Product Features:

- 32-bit implementation
- Hardware floating point support
- Utilizes the mature SMPL optimizer technology for code generation
- Separate compilation

Key Product Benefits:

- High execution speed
- Ease of maintenance

Elite Corporation

4129 May St.
Wichita, KS 67209

Contact:

Steve Keller, Sales Manager
316/942-6619

SMPL II Compiler

Description:

SMPL, a programming language designed to promote portability, maintainability and efficient code generation

Host H/W:

Elite Corporation Series 32000
Consultant computer system

Host S/W:

PVS Operating System

Target H/W:

Series 32000-based computer
system

Target S/W:

PVS or similar operating systems

Language:

SMPL

Availability Date:

1 March 1984

Key Product Features:

- 32-bit implementation
- Very modular, easily maintained language

Key Product Benefits:

- Mature optimizer generates very good code

Eris Systems Corporation

2301 Newton Avenue South
Minneapolis, MN 55405

Contact:

Eric Schneider, Software Engineer
612/374-9614

Bini Database Package

Description:

General purpose database support package, written in ISIL

Host H/W:

Series 32000-based systems

Host S/W:

Tilios Operating System

Target H/W:

Series 32000-based systems

Target S/W:

Tilios Operating System

Language:

ISIL

Availability Date:

For Series 32000-based systems
— 3Q/84

Key Product Features:

- Database operations are accessed through the ISIL programming language
- Package is responsible for saving data records, maintaining corresponding key files, and concurrent access arbitration (large emphasis on performance in an interactive environment)

Eris Systems Corporation

2301 Newton Avenue South
Minneapolis, MN 55405

Contact:

Eric Schneider, Software Engineer
612/374-9614

ISIL Compiler

Description:

High level language compiler,
written in itself

Host H/W:

Series 32000-based systems

Host S/W:

Tilios Operating System

Target H/W:

Series 32000-based systems

Target S/W:

Tilios Operating System

Language:

ISIL

Availability Date:

For Series 32000-based systems
— 3Q/84

Key Product Features:

- Cross between BASIC, Pascal, and Ada highly structured
- Especially suited for development of very large software systems
- Independent compilation
- Character strings, integers, and floating point as well as packed integer data types available
- Can produce either absolute or re-entrant code

Eris Systems Corporation

2301 Newton Avenue South
Minneapolis, MN 55405

Contact:

Eric Schneider, Software Engineer
612/374-9614

Tilios

Description:

General purpose high performance operating system, written in ISIL

Host H/W:

Series 32000-based systems

Host S/W:

N/A

Target H/W:

Series 32000-based systems

Target S/W:

N/A

Language:

ISIL

Availability Date:

For Series 32000-based systems
— 3Q/84

Key Product Features:

- Virtual memory (programs)
- Virtual disk memory (VDM-files)
- File securing
- Real-time, process control abilities
- Batch processing
- Cross disk support (i.e., combining drives)
- Networking/multi-processing
- Data logging (edit sessions, etc.)
- Will run, with some assumptions, the objects of UNIX-based Series 32000 programs

Eris Systems Corporation

2301 Newton Avenue South
Minneapolis, MN 55405

Contact:

Eric Schneider, Software Engineer
612/374-9614

TQX Text Editor

Description:

General purpose text editor,
written in ISIL

Host H/W:

Series 32000-based systems
(product currently being moved
from an enhanced 6502 based
product)

Host S/W:

Tilios Operating System

Target H/W:

Series 32000-based systems
(product currently being moved
from an enhanced 6502 based
product)

Target S/W:

Tilios Operating System

Language:

ISIL

Availability Date:

For Series 32000-based systems
— 3Q/84

Key Product Features:

- Supports both a line and a screen editing mode
- Wordprocessing operations (reformat paragraph, word wrap, etc.)
- Swaps to disk as required
- Global operations (search, substitute, delete, etc.)
- Keeps track of original line numbers as printed in the last listing

Excelan, Inc.
2180 Fortune Drive
San Jose, CA 95131

Contact:
Donna Keeling, Marketing
408/945-9526

EXOS 8010 (TCP/IP Protocol Package)

Description:

TCP/IP communications software for Ethernet LAN-based host computer

Host H/W:

Supports any Series 32000-based host using Multibus, VME Bus, Q-Bus or Unibus backplane

Host S/W:

Provides TCP/IP regardless of host operating system, but provides driver and network applications for UNIX systems

Target H/W:

Runs on any EXOS Ethernet Front-end Processor Board

Target S/W:

EXOS Front-end Processors use the proprietary NX operating system.

Language:

C

Interface/Compatible with other National Software?

Yes, GENIX

Availability Date:

Call

Key Product Features:

- With EXOS Front-end Processors provides Series 32000-based host computer with complete Ethernet capability, including high-level protocol software and, if host is UNIX-based, provides file transfer, TELNET, EMAIL, REMOTE COPY, REMOTE SHELL and REMOTE LOGIN applications as well

Key Product Benefits:

- Compatible with DoD ARPANET standards.
- Provides Berkeley 4.2 network interface compatibility
- With EXOS Front-end Processor Board, only consumes approximately 5% of host (Series 32000) CPU time.

Horizon Software Systems, Inc.

#4 China Basin Bldg.
185 Berry Street, #4821
San Francisco, CA

Contact:
Alison Baker
415/543-1199

The Horizon Software System

Description:

Office automation including word processing, spreadsheet, sorting, spelling, mail-merge

Host H/W:

Any machine running UNIX or a UNIX-look-alike system

Host S/W:

Any UNIX, XENIX, or UNIX-look-alike operating system

Target H/W:

Target S/W:

UNIX System V, Berkeley 4.1, 4.2

Language:

C

Interface/Compatible with other National Software?

Questionable because it currently runs on Berkeley 4.1 and since it is written in C, porting to and making it run on GENIX should be quite simple to do.

Availability Date:

Now

Key Product Features:

- Easy to learn
- Easy to use
- Powerful
- Fully UNIX compatible

Key Product Benefits:

- Reasonable price
- Easy to learn, easy to use
- Written in C
- Uses flat UNIX files
- Uses termcap capability
- Can learn to do basic word processing in 20 minutes

Human Computing Resources Corporation

10 St. Mary's St.
Toronto Canada M4Y 1P9

Contact:

Ron Rogers, Sales Engineer
416/922-1937

4.1 BSD C Cross Compiler

Description:

Cross Compiler for VAX to Series 32000 target.

Host H/W:

VAX 11/730,750,780

Host S/W:

Unity Emulator, 4.1, System V

Target H/W:

Series 32000-based
microcomputer system

Target S/W:

Unity Series 32000 operating
systems

Language:

C

Interface/Compatible with other National Software?

Yes, Cross Compiler produces
object code suitable for Series
32000-based systems (4.1 format)

Availability Date:

1 March 1984

*Contact vendor for System V C Cross Compiler availability date.

Key Product Features:

- Produces relocatable and re-entrant object code
- Takes advantage of Series 32000 modular architecture

Key Product Benefits:

- Portable cross compiler

Human Computing Resources Corporation

10 St. Mary's St.
Toronto Canada M4Y 1P9

Contact:

Ron Rogers, Sales Engineer
416/922-1937

4.1 BSD O/S

Description:

Contains menu shell, HCR/Edit.
Berkeley implementation

Key Product Features:

- Various purchasing and pricing options

Host H/W:

Series 32000

Host S/W:

4.1 BSD

Target H/W:

Series 32000-based
microcomputer system

Target S/W:

Unity Series 32000 operating
systems

Language:

C

Availability Date:

1 March 1984

*Contact vendor for System V availability date.

Innervision Computers

1634 Roll Street
Santa Clara, CA 95005

Contact:

Marcelo Siero
Software Products Director
408/244-8474

DEV16KZ

Description:

Macroassembler for Series 32000 and Dual Linker

Host H/W:

S100 system based on Innervision's 16KZ dual processor (Series 32000 and Z80) board

Host S/W:

CP/M-80 operating system

Target H/W:

S100 system based on Innervision's 16KZ dual processor (Series 32000 and Z80) board

Target S/W:

CP/M-80 operating system

Language:

Pascal

Interface/Compatible with other National Software?

Yes. Assembler mnemonics and addressing mode formats are compatible with the Pascal cross-assembler. Some features are missing and replaced by better ones, such as automatic span dependent optimizations to obtain the smallest off sets.

Availability Date:

April 1984

Key Product Features:

- Highly compatible with National's cross-assembler
- Hybrid programming is supported by linking 32000 and Z80 object modules
- Arbitrary length identifier support
- Direct linking across modules for functions and data
- Linker performs span-dependent optimizations across modules.

Key Product Benefits:

- Hybrid programming allows Z80 OEM users to gradually go to 32-bit CPU
- Macros and powerful assembler features eases programming.
- Provides a 32-bit processor solution compatible with CP/M-80
- Capability to extend CP/M-80 to use Virtual Memory and Hardware Floating Point
- Fast communication across modules for higher performance
- Separate linker program allows faster programming cycle

Innervision Computers

1634 Roll Street
Santa Clara, CA 95005

Contact:

Marcelo Siero
Software Products Director
408/244-8474

Modula II Compiler

Description:

Modula II compiler for Series 32000

Host H/W:

S100 system based on Innervision's 16KZ dual processor (Series 32000 family and Z80) board

Host S/W:

CP/M-80 operating system

Target H/W:

S100 system based on Innervision's 16KZ dual processor (Series 32000 family and Z80) board

Target S/W:

CP/M-80 operating system

Language:

Modula II

Interface/Compatible with other National Software?

Yes, assembly language generated similar to Pascal cross-assembler

Availability Date:

December 1984

Key Product Features:

- Very high level structured language
- Powerful modularity facility
- Performs type checking within and across modules
- Low level systems language features are provided

Key Product Benefits:

- Oriented towards systems and application development
- Allows user to develop very readable and maintainable code
- Modularity encourages good partitioning of large programs.
- Generates high performance efficient code
- Fast high level language programs under CP/M-80

Innervision Computers

1634 Roll Street
Santa Clara, CA 95005

Contact:

Marcelo Siero
Software Products Director
408/244-8474

WEB/16KZ

Description:

Dual Debugger which support both Series 32000 family and the Z80

Host H/W:

S100 system based on Innervision's 16KZ dual processor (Series 32000 family and Z80) board

Host S/W:

CP/M-80 operating system

Target H/W:

S100 system based on Innervision's 16KZ dual processor (Series 32000 family and Z80) board

Target S/W:

CP/M-80 operating system

Language:

Pascal

Availability Date:

August 1984

Key Product Features:

- Debugs hybrid Series 32000/Z-80 programs symbolically
- Displays and allows change of registers in both processors
- Supports history and command files
- Dual disassembler
- Interactive and user friendly (help facility)
- Breakpoints at source level
- Arbitrary length symbols supported

Key Product Benefits:

- Easy to use, with lots of help messages
- Source level breakpoints and listing provides ease of interaction
- Modular design allows interfacing with high level languages
- Programmability of debugger helps solve hard problems

Innervision Computers

1634 Roll Street
Santa Clara, CA 95005

Contact:

Marcelo Siero
Software Products Director
408/244-8474

XDEV16

Description:

Cross-Macroassembler and Linker
for the Series 32000

Host H/W:

CP/M running on a Z-80
 μ processor

Host S/W:

CP/M running on a Z-80
 μ processor

Target H/W:

User's Series 32000 system

Target S/W:

Any — result is a hex file that
can be easily loaded

Language:

Pascal

Interface/Compatible with other National Software?

Yes. Assembler mnemonics and
addressing mode formats are
compatible with the Pascal
cross-assembler. Some features
are missing and replaced by
better ones, such as automatic
span dependent optimizations to
obtain the smallest off sets.

Availability Date:

June 1984

Key Product Features:

- Highly compatible with
National's cross-assembler
- Supports arbitrary length
identifier
- Provides direct linking across
modules with code
modification
- Span-dependent optimizations
within and across modules
increases performance.
- Set feature allows symbolically
naming of registers.

Key Product Benefits:

- Advance programming features
allow easier programming.
- Separate lister program and
advanced design provides
faster programming cycle.
- Large symbol table space,
even on a 64K byte system
- Direct linkage across modules
with small offsets provides
code efficiency and higher
performance
- CP/M-80 host allows for low
cost development of products

JMI Software Consultants **Contact:**

1422 Easton Rd.
Roslyn, PA 19001

Deborah A. Fullam, Technical Marketing
Anita L. Fitzgibbons, Technical Marketing
215/657-5660

BASTOC

Description:

BASTOC is a BASIC to C translator suitable for use in migrating from BASIC to C or as a means of providing a BASIC capability with a C compiler.

Host H/W:

Any system with a standard C compiler is a potential host.

Host S/W:

GENIX, UNIX, XENIX, IDRIS, providing they have a standard C compiler

Target H/W:

Series 32000-based systems

Target S/W:

GENIX, UNIX, XENIX, IDRIS providing they have a standard C compiler

Language:

C

Interface/Compatible with other National Software?

Yes, BASTOC is an executable program that runs under GENIX. Output of BASTOC is compatible with the input of a standard C compiler — i.e., the C compiler that comes with National's GENIX.

Availability Date:

Now

Key Product Features:

- Migration tool from BASIC to C
- Provides BASIC compiler in C environment
- Supports Microsoft BASIC
- Users can tailor dialect
- Supports extended Microsoft BASIC — 100%
- Complete C BASIC and other dialects in future

Key Product Benefits:

- Produces structured C code
- Tailorable to different versions of BASIC
- May be used as a learning tool for BASIC programs

JMI Software Consultants

1422 Easton Rd.
Roslyn, PA 19001

Contact:

Deborah A. Fullam, Technical Marketing
Anita L. Fitzgibbons, Technical Marketing
215/657-5660

C Executive

Description:

The C executive is a ROMable, real-time, multi-tasking operating system, suitable for low-cost, high volume products.

Host H/W:

DEC VAX, DEC PDP-11, IBM PC, GENIX development system. Any system with a C compiler.

Host S/W:

GENIX and most systems with a C compiler, including VAX/VMS, RSX-11M, UNIX, IDRIS, CP/M and PC DOS

Target H/W:

Series 32000-based systems

Target S/W:

Language:

C — 90%, Assembler — 10%

Interface/Compatible with other National Software?

Yes, C EXEC will be available for GENIX.

Availability Date:

October 1981

Key Product Features:

- ROMable
- Multi-tasking
- Pre-emptive scheduler
- Real-time clock support
- Inter-process communication

Key Product Benefits:

- Highly portable
- Extremely flexible
- Resides in only 6K bytes of memory

JMI Software Consultants

1422 Easton Rd.
Roslyn, PA 19001

Contact:

Deborah A. Fullam, Technical Marketing
Anita L. Fitzgibbons, Technical Marketing
215/657-5660

JMI Portable C Library

Description:

A comprehensive library, written in C, which contains over 100 routines equivalent to those found in Kernighan & Ritchie's C program language and Whitesmith's portable run time library.

Host H/W:

Any system with a C compiler

Host S/W:

VAX/VMS, UNIX, RSX-11M, IDRIS

Target H/W:

Series 32000-based systems

Target S/W:

GENIX, JMI's C-EXEC

Language:

C

Interface/Compatible with other National Software?

Yes, which means that applications written in C, running under GENIX, can call the C library.

Availability Date:

March 1984

Key Product Features:

- ROMable
- Functions may be shared
- Dynamic memory management
- Supports formatted I/O

Key Product Benefits:

- Portable
- Existing applications, written in C, can easily call this library
- Source code provided
- One-time charge, no additional royalties

JMI Software Consultants

1422 Easton Rd.
Roslyn, PA 19001

Contact:

Deborah A. Fullam, Technical Marketing
Anita L. Fitzgibbons, Technical Marketing
215/657-5660

Series 16032 C Cross Compiler

Description:

The Series 32000 C cross compiler provides a complete software development package for C programs targeted for the Series 32000.

Host H/W:

DEC VAX 750 or 780, DEC PDP-11

Host S/W:

VAX/VMS, RSX-11M, UNIX, and IDRIS

Target H/W:

Series 32000-based systems

Target S/W:

MON16, C Executive

Language:

C

Interface/Compatible with other National Software?

Yes, our Series 32000 cross compiler will be compatible with the National assembler. Our product contains a program called DLL16.C which assumes that it is talking to MON for downloading the executable code.

Availability Date:

Now

Key Product Features:

- Implements Kernighan & Ritchie C version 7
- Uses 6 machine registers for the C language's "register" declaration
- Include both a native compiler and the Series 32000 cross compiler

Key Product Benefits:

- Includes a comprehensive portable C library
- Available for most popular multi-user development systems
- Cross assembler and linker

Kent State University

Dept. of Mathematics KSU
Kent, OH 44242

Contact:
Phillip Prendeville
216/672-2430

16000 Assembler

Description:

Series 32000 assembler for UNIX
(source only)

Host H/W:

Any UNIX machine

Host S/W:

UNIX

Target H/W:

Series 32000-based systems

Target S/W:

Any UNIX O.S.

Language:

C

Interface/Compatible with other National Software?

No, but planned to interface with
GENIX compilers

Availability Date:

May 1984

Key Product Features:

- Includes source
- Macro extensions
- On-line manual
- Generates standard loader
output

Key Product Benefits:

- Uses standard UNIX tools like
Lex and Yacc
- Easily modifiable
- Easy to use
- Well documented
- No royalties — one-time
charge \$100
- Cheap!

Lattice Logic, Ltd.
9, Wemyss Place
Edinburgh, Scotland, EH3 6DH

Contact:
Peter S. Robertson,
Director of Systems Software
(031) 225 3434

Pascal Compiler

Description:

Pascal compiler conforming to ISO 7185

Host H/W:

Series 32000

Host S/W:

Ported to new O.S. on application

Target H/W:

Series 32000

Target S/W:

Ported to new O.S. on application

Language:

IMP

Interface/Compatible with other National Software?

Not known, but the compiler is easily ported to new operating systems.

Availability Date:

20 February 1984

Key Product Features:

- Diagnostic or optimizing compilation modes
- Position independent and reentrant object code
- Extensive post-mortem trace back on run time errors
- Language extensions including: separate compilation, non-decimal constants, in-line assembly language

Key Product Benefits:

- Highly optimized code for production programs
- Comprehensive run-time diagnostics for program development
- Compatible with other language processors from Lattice
- Available as a cross compiler (VAX)

Lattice Logic, Ltd.
9, Wemyss Place
Edinburgh, Scotland, EH3 6DH

Contact:
Peter S. Robertson,
Director of Systems Software
(031) 225 3434

Pascal Cross-Compiler

Description:

Pascal compiler conforming to ISO 7185

Host H/W:

VAX 11/750, 780

Host S/W:

VMS

Target H/W:

Series 32000-based systems

Target S/W:

Ported to new O.S. on application

Language:

IMP

Interface/Compatible with other National Software?

Not known, but the compiler is easily ported to new operating systems.

Availability Date:

20 February 1984

Key Product Features:

- Diagnostic or optimizing compilation modes
- Position independent and reentrant object code
- Extensive post-mortem trace back on run time errors
- Language extensions including: separate compilation, non-decimal constants, in-line assembly language

Key Product Benefits:

- Highly optimized code for production programs
- Comprehensive run-time diagnostics for program development
- Compatible with other language processors from Lattice

Logica PLC- Logic UK Ltd.

64 Newman Street
London W1A4SE UK

Contact:

Stuart Hooper, OEM Sales Manager
44-1-637-1511

XENIX-32

Description:

UNIX SYSTEM III with Microsoft enhancements implemented on the Series 32000. Full XENIX 3.0 release ported to Series 32000.

Host H/W:

VAX 750

Host S/W:

UNIX 4.1

Target H/W:

Series 32000-based systems

Target S/W:

N/A

Language:

Standard C

Interface/Compatible with other National Software?

Yes, derived from National's GENIX. Compatible with all GENIX compilers and tools.

Availability Date:

May 1984

Key Product Features:

- Multi-user, multi-tasking
- Inter process communication
- Record and file locking
- Full demand paging virtual memory utilizing Series 32000 CPU
- Functionally compatible with other XENIX 3.0 systems

Key Product Benefits:

- Applications written for other XENIX implementations
- Could be ported very easily
- XENIX O.S. can be used as a development environment for MS-DOS applications
- Full catalog of languages, utilities, and other development tools will also be available for the Series 32000.

Micro Focus

2465 E. Bayshore Rd., Suite 400
Palo Alto, CA 95136

Contact:

Laura Sharp
OEM Account Manager
415/856-4161

Animator

Description:

A source level symbolic debugger that allows “animation” of a program

Host H/W:

Series 32000-based machines

Host S/W:

XENIX or bsd 4.1 UNIX — will port to other versions

Target H/W:

Series 32000-based machines

Target S/W:

GENIX, XENIX or bsd 4.1 UNIX — will port to other versions

Language:

Level II COBOL

Interface/Compatible with other National Software?

Yes, has been ported to GENIX for two National customers.

Availability Date:

Now

Key Product Features:

- Source code level debugging and analysis
- Variable speed, statement by statement execution monitoring
- Menu driven
- “What-if” analysis
- Multiple breakpoints (conditional as well)

Key Product Benefits:

- Lower development costs
- Faster time to market
- Easier program enhancement and maintenance
- Better quality programs
- Various purchasing/pricing options

Micro Focus

2465 E. Bayshore Rd., Suite 400
Palo Alto, CA 94303

Contact:

Laura Sharp
OEM Account Manager
415/856-4161

Compact Level II COBOL

Description:

High level GSA certified COBOL compiler

Host H/W:

Series 32000-based machines

Host S/W:

XENIX or bsd 4.1 UNIX — will port to other versions

Target H/W:

Series 32000-based machines

Target S/W:

GENIX, XENIX or bsd 4.1 UNIX — will port to other versions

Language:

Level II COBOL

Availability Date:

Now

Key Product Features:

- GSA certified to the federal high level COBOL standard
- Small memory requirements
- Multi-user support
- Interactive screen handling
- Compatible with full range of visual programming tools

Key Product Benefits:

- Certified quality and reliability
- Easy to learn
- Earlier project completion
- Broad range of tools
- Easier enhancements and maintenance
- Various purchasing/pricing options

Micro Focus

2465 E. Bayshore Rd., Suite 400
Palo Alto, CA 95136

Contact:

Laura Sharp
OEM Account Manager
415/856-4161

Forms-2

Description:

Screen program generator

Host H/W:

Series 32000-based machines

Host S/W:

XENIX or bsd 4.1 UNIX — will
port to other versions

Target H/W:

Series 32000-based machines

Target S/W:

GENIX, XENIX or bsd 4.1 UNIX
— will port to other versions

Language:

Level II COBOL

Interface/Compatible with other National Software?

Yes, ported to GENIX for National
customers.

Availability Date:

Now

Key Product Features:

- Generates error free COBOL
source code
- Screen “painting”
- Flexible screen editing
- Multiple redefinition of screens
- Easy integration into COBOL
programs

Key Product Benefits:

- More end-user involvement in
screen definition
- Better quality screens are
produced
- Easier to develop
documentation
- Reduced programming cost
- Various purchasing/pricing
options

Micro Focus

2465 E. Bayshore Rd., Suite 400
Palo Alto, CA 94303

Contact:

Laura Sharp
OEM Account Manager
415/856-4161

High Performance Level II COBOL

Description:

High level GSA certified compiler

Host H/W:

Series 32000-based machines

Host S/W:

XENIX or bsd 4.1 UNIX — will
port to other versions

Target H/W:

Series 32000-based machines

Target S/W:

GENIX, XENIX or bsd 4.1 UNIX
— will port to other versions

Language:

Level II COBOL

Interface/Compatible with other National Software?

Yes, our high performance
COBOL environment has been
ported to GENIX for National
customers.

Availability Date:

Now

Key Product Features:

- GSA certified to the federal high level COBOL standard
- Fast compilation speed
- Compiles to native code of machine
- Multi-user support
- Interactive screen handling
- Compatible with full range of visual programming tools

Key Product Benefits:

- Certified quality and reliability
- Easy to learn
- Broad range of tools
- Easier enhancements and maintenance
- High performance execution
- Various purchasing/pricing options

MICRONETICS

520 N.W. Davis
Portland, OR 97209

Contact:

Daryl V. McDaniel, President
503/224-7056

CX16K

Description:

C cross compiler for Series 32000 microprocessors, for the purpose of developing Series 32000 S/W on a Z80-based system

Host H/W:

Z80 or Series 32000-based system with a minimum of 64K or memory

Host S/W:

CP/M V2.2 or later and the Solutionware or National Semiconductor Pascal cross software package

Target H/W:

Series 32000-based systems

Target S/W:

MON, RTS, GENIX/UNIX, or standalone

Language:

C and Assembler

Interface/Compatible with other National Software?

Object code produced (Assembler or relocatable binary) is compatible with the cross software packages supplied by National Semiconductor and Solutionware (Pascal).

Availability Date:

10 February 1984

Key Product Features:

- Produces either Assembler source or relocatable object code
- Object code compatible with National Semiconductor and Solutionware Pascal
- Extensive error reporting and debugging features
- Efficient utilization of all Series 32000 architectural features

Key Product Benefits:

- Allows development of software in C for the Series 32000 while utilizing existing microcomputer resources
- Efficient code generation
- The only C cross compiler outside of UNIX which supports the current UNIX C extensions; passing and returning structures, and enumerated types
- The run-time support routines are specific to the target environment. Supported environments are: MON, RTS, GENIX/UNIX, and standalone.

MICRONETICS

520 N.W. Davis
Portland, OR 97209

Contact:

Daryl V. McDaniel, President
503/224-7056

EMU8080

Description:

INS8080 emulator running on DB32016 allowing one to run existing 8080 software on Series 32000-based hardware

Host H/W:

Series 32000-based systems (SYS32, DB32016, etc.)

Host S/W:

N/A

Target H/W:

Series 32000-based systems

Target S/W:

N/A

Language:

Series 32000 Assembler

Interface/Compatible with other National Software?

The emulator may be run as a user mode program under National's MON or any known O.S. supporting virtual memory after appropriate modifications are made to the I/O emulation routines to support the target hardware/software environment.

Availability Date:

10 February 1984

Key Product Features:

- Runs on all Series 32000 family processors
- Runs CP/M, Microsoft Basic, Wordstar, etc.
- Near real-time emulation on 10 MHz system
- ROMable, position independent code
- Source code provided

Key Product Benefits:

- Allows immediate system operation using readily available 8080 software

MIPS Software Development, Inc.

31555 West Fourteen Mile Road,
Suite #104
Farmington Hills, MI 48018

Contact:
David P. Adams,
Vice President of Marketing
313/855-3552

DYALOG APL

Description:

A complete implementation of the APL language interpreter meeting all current standards and containing advanced features.

Host H/W:

VAX 730, 750, and 780 —
HP 9000

Host S/W:

BSD 4.1/4.2 or System V UNIX

Target H/W:

Series 32000-based
microcomputer systems

Target S/W:

GENIX/UNIX

Language:

C

Interface/Compatible with other National Software?

Yes, the interpreter was developed in C and runs under UNIX Berkeley 4.1/4.2 or a like operating system; i.e., GENIX.

Availability Date:

22 February 1984

Key Product Features:

- Nested arrays — the latest feature to be added to the major APLs.
- Advanced version of the language which runs under UNIX.
- Event Trapping — normal errors can be trapped so control is maintained.
- Commercial Formatter — the popular FMT system function is fully implemented.
- Component File System allows easy access to data outside the workspace.

Key Product Benefits:

- Runs under UNIX and is available on wide range of computers.
- Allows for greater portability of applications software.
- APL provides greater programmer productivity of up to 10 times.
- Powerful operators allow programmers to quickly code programs.

MultiNational Software, Inc.

P.O. Box 5344
Austin, TX 78763

Contact:
Rod Manis, President
512/346-9318

/rdb

Description:

A Relational Data Base
Management System for UNIX

Host H/W:

Any that runs UNIX

Host S/W:

Any UNIX

Target H/W:

Any Series 32000-based system
running UNIX

Target S/W:

Any UNIX

Language:

C

Interface/Compatible with other National Software?

Yes, any UNIX system (i.e.,
GENIX on SYS32)

Availability Date:

1 November 1982

Key Product Features:

- Fully relational
- No schema necessary
- Works on simple tables
- Can pipe output of one
command to another or to
UNIX commands

Key Product Benefits:

- Inexpensive
- Easy to use
- Powerful

Multi Solutions, Inc.
123 Franklin Corner Road, #207
Lawrenceville, NJ 08648

Contact:
Charles J. Lombardo, Chairman
609/896-4100

S1 BASIC

Description:

ANSI BASIC compiler and interpreter plus extensions

Host H/W:

Series 32000-based systems

Host S/W:

S1 Operating System

Target H/W:

Series 32000-based systems

Target S/W:

S1 Operating System

Language:

SL

Availability Date:

Call, contingent upon availability of Series 32000-based system.

Key Product Features:

- ANSI BASIC
- Compiler and interpreter both available
- 64 character names
- Extended precision floating point

Key Product Benefits:

- Compiled programs can be called and can call the other S1 languages.
- Converters available for most microcomputer and minicomputer BASICs

Multi Solutions, Inc.
123 Franklin Corner Road, #207
Lawrenceville, NJ 08648

Contact:
Charles J. Lombardo, Chairman
609/896-4100

S1 C

Description:

Kernighan and Ritchie C compiler plus extensions

Host H/W:

Series 32000-based systems

Host S/W:

S1 Operating System

Target H/W:

Series 32000-based systems

Target S/W:

S1 Operating System

Language:

SL

Availability Date:

Call, contingent upon availability of Series 32000-based system.

Key Product Features:

- Kernighan and Ritchie C and extensions (similar to Berkeley)
- 64 character names

Key Product Benefits:

- Translated programs can be called and can call the other S1 languages.

Multi Solutions, Inc.
123 Franklin Corner Road, #207
Lawrenceville, NJ 08648

Contact:
Charles J. Lombardo, Chairman
609/896-4100

S1 FORTRAN 77

Description:

ANSI FORTRAN 77 compiler plus extensions

Host H/W:

Series 32000-based systems

Host S/W:

S1 Operating System

Target H/W:

Series 32000-based systems

Target S/W:

S1 Operating System

Language:

SL

Availability Date:

Call, contingent upon availability of Series 32000-based system.

Key Product Features:

- ANSI FORTRAN 77
- All S1 facilities available from the languages
- 64 character names
- Extended precision floating point

Key Product Benefits:

- Translated programs can be called and can call the other S1 languages.
- Converters available for most mainframe and mini computer FORTRANs

Multi Solutions, Inc.
123 Franklin Corner Road, #207
Lawrenceville, NJ 08648

Contact:
Charles J. Lombardo, Chairman
609/896-4100

S1 Operating System

Description:

Operating System with full support for: Networking, Multi-User, Multitasking, Multi-Processing, Bit Mapped Displays, Windowing, Keyed Files, Real Time

Host H/W:

Series 32000

Host S/W:

N/A

Target H/W:

Series 32000-based systems

Target S/W:

N/A

Language:

SL

Interface/Compatible with other National Software?

UNIX Source Compatible

Availability Date:

Call, contingent upon availability of Series 32000-based system.

Key Product Features:

- Portable, modular
- Multi-User, Multitasking, Multi-Processing
- Parallel Processing, Dist. Processing
- 64 Character Names
- Real Time
- Networking
- Keyed Files, Hierarchical Directories
- ISAM, VSAM, B-tree, Record Locking
- Bit Mapped Displays
- Full Screen Management, Editing
- Full Memory Management, Virtual Memory
- Semaphores and Locks

Key Product Benefits:

- S1 modularity allows it to be configured specifically for your application.
- S1 portability allows it to be moved to different architectures quickly and easily.
- S1 functionality allows sophisticated applications to be written
- S1 compatibility makes it possible for applications to be moved from other systems.
- Real Time Support
- UNIX Source Compatible

Multi Solutions, Inc.
123 Franklin Corner Road, #207
Lawrenceville, NJ 08648

Contact:
Charles J. Lombardo, Chairman
609/896-4100

S1 Pascal

Description:

ISO standard Pascal plus extensions

Host H/W:

Series 32000-based systems

Host S/W:

S1 Operating System

Target H/W:

Series 32000-based systems

Target S/W:

S1 Operating System

Language:

SL

Availability Date:

Call, contingent upon availability of Series 32000-based system.

Key Product Features:

- ISO conforming Pascal compiler
- All S1 facilities available for the language
- 64 character names
- Module support, strings, extended floating, decimal arithmetic

Key Product Benefits:

- Translated programs can be called and can call the other S1 languages.
- Full ISO conformance (switch selectable)
- Converters available for most Pascal compilers

**Jim Murray,
Computer Programming**

P.O. Box 8922
Madeira Beach, FL 33738

Contact:

Jim Murray, Owner
813/393-9347

Compute CRC-16 on a Stream

Description:

Function for computing the CRC-16 polynomial on a data stream.

Host H/W:

N/A

Host S/W:

UNIX

Target H/W:

Series 32000-based systems

Target S/W:

UNIX

Language:

C

Availability Date:

22 February 1984

Key Product Features:

- Allows a check sum polynomial to be calculated on a data stream

Key Product Benefits:

- May be used in debugging bisync comm packages or synchronous chip set-up modes
- May also be used to frame and check asynch data transmission reception
- Cheap — \$200.00 + media and mailing

**Jim Murray,
Computer Programming**

P.O. Box 8922
Madeira Beach, FL 33738

Contact:
Jim Murray, Owner
813/393-9347

Field Oriented Screen Utilities (FOCUS)

Description:

Application screen design aid and run time access package

Host H/W:

N/A

Host S/W:

UNIX

Target H/W:

Series 32000-based systems

Target S/W:

UNIX

Language:

C

Availability Date:

22 February 1984

Key Product Features:

- Allows application screens to be built using the 'vi' editor. Fields in the screen are defined using special sequences as protected, numeric, reversed, etc. The run time package allows the fields to be accessed by field number thereby easing the burden of initial development and modification.
- The screen defined and the operator interaction is much like that of an IBM 5251 or 3278 display station.

Key Product Benefits:

- Ease of construction and modification of screens and applications that access screens in a field oriented manner
- Allows the programmer to focus upon the application logic rather than the mechanics of a screen format
- Cheap — \$350.00 + media and mailing

**Jim Murray,
Computer Programming**

P.O. Box 8922
Madeira Beach, FL 33738

Contact:
Jim Murray, Owner
813/393-9347

Hex Dump

Description:

Dumps a UNIX file in hexadecimal with aside graphics.

Host H/W:

N/A

Host S/W:

UNIX

Target H/W:

Series 32000-based systems

Target S/W:

UNIX

Language:

C

Availability Date:

22 February 1984

Key Product Features:

- Dumps a file that is in either the ASCII or EBCDIC character set in hexadecimal

Key Product Benefits:

- Programmers' debugging tool. Shows the exact recording of a file in those instances where a program is experiencing difficulties
- Useful for seeing the nature of "foreign" files or program output
- Cheap — \$50.00 + media and mailing

**Jim Murray,
Computer Programming**

P.O. Box 8922
Madeira Beach, FL 33738

Contact:

Jim Murray, Owner
813/393-9347

IBM 2780 Simulator

Description:

IBM 2780 simulator

Host H/W:

N/A

Host S/W:

UNIX

Target H/W:

Series 32000-based system,
synchronous front end required

Target S/W:

UNIX

Language:

C

Availability Date:

22 February 1984

Key Product Features:

- Provides for access to host files or computational power, from a UNIX-based system
- Operates unattended in background
- Transmits files that are copied to a specific directory and receives host transmissions into a specific directory

Key Product Benefits:

- Purchase or royalty plan available
- Other front-ends coded on a time and material basis

**Jim Murray,
Computer Programming**

P.O. Box 8922
Madeira Beach, FL 33738

Contact:
Jim Murray, Owner
813/393-9347

IBM 3271 Simulator

Description:

IBM 3271 simulator

Host H/W:

N/A

Host S/W:

UNIX

Target H/W:

Series 32000-based systems,
synchronous front end required

Target S/W:

UNIX

Language:

C

Availability Date:

22 February 1984

Key Product Features:

- A background process simulates the 3271 bi-synch control unit.
- Up to 12 terminals and printers may be logically attached to the control unit. Printers are automatically started in background.
- Terminals may attach to the control unit as a foreground process and return to UNIX operation at will.

Key Product Benefits:

- Purchase or royalty plan available
- Other front-ends coded on a time and material basis

**Jim Murray,
Computer Programming**

P.O. Box 8922
Madeira Beach, FL 33738

Contact:

Jim Murray, Owner
813/393-9347

IBM 3274 Simulator

Description:

IBM 3274 simulator

Host H/W:

N/A

Host S/W:

UNIX

Target H/W:

Series 32000-based system,
synchronous front end required

Target S/W:

UNIX

Language:

C

Availability Date:

22 February 1984

Key Product Features:

- A background process simulates the 3274 SNA control unit.
- Up to 12 terminals and printers may be logically attached to the control unit. Printers are automatically started in background.
- Terminals may attach to the control unit as a foreground process and return to UNIX operation at will.

Key Product Benefits:

- Purchase or royalty plan available
- Other front-ends coded on a time and material basis

**Jim Murray,
Computer Programming**

P.O. Box 8922
Madeira Beach, FL 33738

Contact:

Jim Murray, Owner
813/393-9347

IBM 5251 Simulator

Description:

IBM 5251 simulator

Host H/W:

N/A

Host S/W:

UNIX

Target H/W:

Series 32000-based system,
synchronous front end required

Target S/W:

UNIX

Language:

C

Availability Date:

22 February 1984

Key Product Features:

- A background process simulates the 5251 SNA control unit.
- Up to 12 terminals and printers may be logically attached to the control unit. Printers are automatically started in background.
- Terminals may attach to the control unit as a foreground process and return to UNIX operation at will.

Key Product Benefits:

- Purchase or royalty plan available
- Other front-ends coded on a time and material basis

**Jim Murray,
Computer Programming**

P.O. Box 8922
Madeira Beach, FL 33738

Contact:
Jim Murray, Owner
813/393-9347

Test Data Generator

Description:

Test data generator

Host H/W:

N/A

Host S/W:

UNIX

Target H/W:

Series 32000-based systems

Target S/W:

UNIX

Language:

C

Availability Date:

22 February 1984

Key Product Features:

- Allows the building of binary test data streams on disk. The stream is subsequently modifiable on a byte within block basis via defined insert and delete key sequences.

Key Product Benefits:

- Makes possible the duplication of lab or comm data streams for program debug or development
- The sequence can be run repeatedly through the processing program without going on-line.
- Cheap — \$150.00 + media and mailing

National Semiconductor Corporation

2900 Semiconductor Drive
Santa Clara, CA 95050

Contact:

Bruce Blakley
Product Marketing Manager, UNIX
408/721-5557

GENIX Operating System

Description:

Source code of National's port of Berkeley 4.1 bsd to the Series 32000 microprocessor

Host H/W:

VAX Series

Host S/W:

Berkeley 4.1 bsd

Target H/W:

Series 32000-based hardware

Target S/W:

GENIX binary running on customer's Series 32000-based systems

Language:

C

Availability Date:

Now

- * Contact vendor for System V availability.
- Contact vendor for Berkeley 4.2 bsd availability.

Key Product Features:

- Complete source code and cross support tools to compile, download, and run GENIX operating system on target hardware
- Source includes National's implementation of demand-paged virtual memory for the Series 32000 family and floating point unit support

Key Product Benefits:

- Offers a version of Berkeley 4.1 for the Series 32000 that the customer can tailor to target hardware and application
- Offers demand-paged virtual memory for the Series 32000
- Standard Berkeley UNIX utilities
- Source code control system

National Semiconductor Corporation

2900 Semiconductor Drive
Santa Clara, CA 95050

Contact:
Anne Wagner
SW Products Mktg. Dir.
408/721-5550

EXEC

Description:

ROMable real-time multi-tasking executive for low-cost systems

Host H/W:

VAX 11/730, 750 or 780

Host S/W:

VAX/VMS, VAX/UNIX, SYS32

Target H/W:

Series 32000-based systems

Target S/W:

N/A

Language:

Series 32000 assembly language

Interface/Compatible with other National Software?

Compatible with Pascal cross development package. Has library of routines to interface to Pascal programs. Can be debugged with DBG and ISE.

Availability Date:

Now

Key Product Features:

- ROMable
- Reconfigurable
- Working demo provided
- Complete source code provided
- Simple licensing provisions
- Well documented!!
- Time-slicing

Key Product Benefits:

- Executive needs only 4K of memory
- Very flexible and easy to modify

National Semiconductor Corporation

2900 Semiconductor Drive
Santa Clara, CA 95050

Contact:

Bruce Blakley
Product Marketing Manager, UNIX
408/721-5557

C (GENIX Cross Support)

Description:

Cross Support tools to develop Series 32000 object code on the VAX for down loading and execution on Series 32000 target hardware

Host H/W:

VAX 11 Series

Host S/W:

Berkeley 4.1 bsd

Target H/W:

Any Series 32000-based system

Target S/W:

User can use C to develop any Series 32000 software. Package includes monitor PROMs.

Language:

C and Pascal

Availability Date:

Now

Key Product Features:

- nmcc — The Portable C compiler modified to produce 32000 assembly code
- nmas — An assembler for 32000 assembly code
- nmeld — Series 32000 loader
- ddt — A remote debugger
- Other software development tools
- Supports In-System Emulators

Key Product Benefits:

- Provides complete tools for compiling, assembling, loading, downloading, running and debugging Series 32000 code on a target Series 32000 system, using VAX/UNIX as the host environment

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Pascal Cross Software Package

Description:

Comprehensive software development package producing Series 32000 native code

Host H/W:

VAX 11/730, 750 or 780

Host S/W:

VAX/VMS

Target H/W:

Series 32000-based systems

Target S/W:

Package includes MON (monitor program)

Language:

Pascal

Interface/Compatible with other National Software?

Yes, supports applications using EXEC

Availability Date:

Now

Key Product Features:

- Source level symbolic debugger
- Supports Series 32000 floating point unit
- Pascal run-time support for development boards
- ANSI standard Pascal
- Package contains ISE support software

Key Product Benefits:

- Produces Series 32000 native code
- Comprehensive documentation

OASYS , Inc.

60 Aberdeen Ave.
Cambridge, MA 02138

Contact:

Joel Schacht, President
617/491-4180

C-16000 C Cross Compiler for Series 32000

Description:

Fully optimizing compiler for Series 32000 series. Can be configured as a resident compiler or as a VAX cross compiler.

Host H/W:

DEC VAX

Host S/W:

VMS, Berkeley UNIX 4.1, 4.2, System III and V

Target H/W:

Series 32000-based systems

Target S/W:

GENIX 4.1 bsd, 4.2 bsd, System V

Language:

Pascal

Interface/Compatible with other National software?

Yes, the C-16000 compiler may be used as a cross compiler on DEC VAX (UNIX or VMS) systems or as a native compiler on GENIX-based systems. In either case, the output of the C compiler is fully compatible with target SYS32 (GENIX) O.S. and system utilities (e.g., National assembler). C-16000 is also sold with its own assembler/linker system, if needed.

Availability Date:

8 February, 1984

Key Product Features:

- Complete Berkeley C compatibility, full compatibility with Kernighan & Ritchie spec
- Generated code runs up to 4 times faster than portable C compiler code
- Generates 30% less code than portable C compiler versions
- Extensive optimizations are performed
- Complete IEEE floating point support
- Cross assembler available also

Key Product Benefits:

- Available for VAX VMS and UNIX systems
- Corporate/site discounts available. Source code may be purchased.

OASYS , Inc.

60 Aberdeen Ave.
Cambridge, MA 02138

Contact:

Joel Schacht, President
617/491-4180

FORTRAN-16000 Cross Compiler for VAX

Description:

ANSI FORTRAN-77 compiler for Series 32000-based target machine

Host H/W:

DEC VAX

Host S/W:

VMS, Berkeley UNIX 4.1, 4.2, System III and V

Target H/W:

Series 32000-based systems

Target S/W:

GENIX, UNIX 4.1 bsd, 4.2 bsd, System V

Language:

Pascal

Interface/Compatible with other National software?

Yes, the FORTRAN-Series 32000 compiler may be used as a cross compiler on DEC VAX (VMS or UNIX) systems or as a native compiler on GENIX-based systems. In either case, the output of the compiler is fully compatible with target GENIX O.S. and system utilities (e.g., National assembler).

Availability Date:

8 February 1984

Key Product Features:

- Complete ANSI FORTRAN-77 (full language)
- Cross assembler available
- Works with Series 32000 floating point unit
- Generated code runs up to 4 times faster than portable UNIX FORTRAN 77 compiler
- Uses proven UNIX FORTRAN-77 run time system

Key Product Benefits:

- Source code may be purchased
- FORTRAN-Series 32000 is also available with its own assembler/linker system, which is not GENIX-compatible.

OASYS , Inc.
60 Aberdeen Ave.
Cambridge, MA 02138

Contact:
Joel Schacht, President
617/491-4180

NS16000 Cross Assembler for VAX

Description:

Series 32000 family cross assembler, linker, librarian, cross reference facility and debugger package for VAX VMS/UNIX systems

Host H/W:

DEC VAX

Host S/W:

VMS, bsd 4.1, 4.2

Target H/W:

Series 32000-based systems

Target S/W:

UNIX 4.1 bsd, 4.2 bsd, System V

Language:

C

Availability Date:

Call

Key Product Features:

- 5000 lines per minute compilation speed
- Compatible with C-16000, FORTRAN-160000 and Pascal-16000 compilers
- Automatic branch size determination

Key Product Benefits:

- Source code may be purchased

OASYS , Inc.
60 Aberdeen Ave.
Cambridge, MA 02138

Contact:
Joel Schacht, President
617/491-4180

PAS-16000 PASCAL Cross Compiler

Description:

Fully optimizing ANSI standard Pascal compiler for Series 32000. Can be configured as a resident, or VAX cross compiler.

Host H/W:

DEC VAX

Host S/W:

VMS, Berkeley UNIX 4.1, 4.2, System III and V

Target H/W:

Series 32000-based systems

Target S/W:

GENIX 4.1 bsd, 4.2 bsd, System V

Language:

Pascal

Interface/Compatible with other National software?

Yes, the Pascal-16000 compiler may be used as a cross compiler on DEC VAX (VMS or UNIX) systems or as a native compiler on GENIX-based systems. In either case, the output of the compiler is fully compatible with target GENIX O.S. and system utilities (e.g., National assembler). Pascal-16000 is also available with its own assembler/linker system, which is not GENIX-compatible.

Availability Date:

8 February, 1984

Key Product Features:

- Complete ANSI Pascal compatibility cross-assembler available
- Complete IEEE floating point support
- Works with Series 32000 floating point unit
- Generated code runs up to 4 times faster than portable UNIX PC compiler
- Uses proven UNIX Pascal run time system

Key Product Benefits:

- Source code may be purchased

Olympus Software, Inc.

644 Elizabeth Street
Salt Lake City, UT 84102

Contact:

Dick Kreutzer, President
801/583-5202

UltraCalc

Description:

Virtual electronic spreadsheet, written in C, designed for UNIX, powerful, flexible, and friendly

Host H/W:

VAX, Series 32000-based system

Host S/W:

UNIX System III, 4.1 bsd

Target H/W:

Series 32000-based micros

Target S/W:

GENIX/UNIX System V

Language:

C

Interface/Compatible with other National Software?

Yes, UltraCalc interfaces with virtually any other package capable of reading or writing ASCII files.

Availability Date:

Now

Key Product Features:

- Superior user interface
- Full on-line help
- Unlimited spreadsheet size
- Automatic linking/consolidation
- Named cells and areas
- Sorting of rows and columns
- Full editing capabilities
- Executable procedure files
- Interfaces with other programs (word processor, DBMS . . .)

Key Product Benefits:

- Productivity is greatly improved with a user interface which is intuitive, expressive and flexible.
- Full featured, UltraCalc expands the range of applications to which it can be applied.

ORACLE Corporation

2710 Sand Hill Road
Menlo Park, CA 94025

Contact:

Richard J. Heaps
Director of Marketing
415/854-7350

ORACLE DBMS

Description:

ORACLE DBMS, User Friendly Interface (UFI), Interactive Application Facility (IAF), Host Language Interface (HLI)

Host H/W:

VAX (all), IBM 43XX, 30XX, DG MV8000, MV10000, Harris, Fortune, Altos, PDP-11

Host S/W:

VM/CMS, VMS, UNIX, RSX-11, RSTS, XENIX, Vulcan, AOS/VS

Target H/W:

Series 32000-based microcomputer systems

Target S/W:

GENIX/UNIX

Language:

C

Interface/Compatible with other National Software?

ORACLE is an extremely portable DBMS and is running on any number of HW/OS combinations. Kernel has been ported to a number of microprocessor topologies, including Series 32000 by Tolerant Systems.

Availability Date:

27 February 1984

Key Product Features:

- Full relational DBMS; full IBM/SQL implementation
- Easy creation of multi-screen multi-table applications
- Full security
- Interface to Host Languages including C, COBOL, FORTRAN, Pascal

Key Product Benefits:

- Available now in either VMS/UNIX format
- Portable to proprietary OS as well as standard
- Operating System dependencies isolated

PHACT Associates, Ltd.
225 Lafayette Street — Room 1005
New York, NY 10012

Contact:
David Graham, President
212/219-3744

PHACT-dbrm

Description:

PHACT-dbrm multi-keyed
ISAM-like data base record
manager for manipulation of
keyed records in a database

Host H/W:

VAX 11/780

Host S/W:

UNIX System III

Target H/W:

Series 32000-based
microcomputer systems

Target S/W:

UNIX and derivatives

Language:

Standard C

Availability Date:

Now

Key Product Features:

- Uses schema described in data dictionary
- 9 data types
- 100 fields per record
- 9 access paths per database
- Made up from any fields in record
- Multi-user
- Access on full or partial key
- Variable length records
- Record and database locking
- Password protection

Key Product Benefits:

- Portability of data (databases are fully portable across systems)
- Increase productivity as PHACT-dbrm takes care of all data storage and manipulation
- Source code available
- Gives programmers a consistent, easy to use programming environment

PHACT Associates, Ltd.

225 Lafayette Street — Room 1005
New York, NY 10012

Contact:

David Graham, President
212/219-3744

PHACT-rg

Description:

PHACT-rg is a powerful report generator for PHACT databases.

Host H/W:

VAX 11/780

Host S/W:

UNIX System III

Target H/W:

Series 32000-based
microcomputer systems

Target S/W:

UNIX and derivatives

Language:

Standard UNIX C

Availability Date:

2nd Quarter 1984

Key Product Features:

- Takes input from PHACT-rgl or PHACT databases
- Interactive or batch supports dynamic fields and arithmetic and logical operators
- Primary and secondary level breaks
- Supports MIN, MAX, AUG and total for any field

Key Product Benefits:

- Programmers need never write reports again.
- Gives the user the power to define their own reports
- Reports can be quickly changed to suit circumstances

PHACT Associates, Ltd.

225 Lafayette Street — Room 1005
New York, NY 10012

Contact:

David Graham, President
212/219-3744

PHACT-rql

Description:

PHACT-rql is a SEQUEL like relational query language for PHACT databases.

Host H/W:

VAX 11/780

Host S/W:

UNIX System III

Target H/W:

Series 32000-based
microcomputer systems

Target S/W:

UNIX and derivatives

Language:

Standard UNIX C

Availability Date:

2nd Quarter, 1984

Key Product Features:

- Easy to use (SEQUEL) selects from multiple databases
- Has interactive mode and batch mode
- Read and update capability
- Dynamic fields
- It will create subsets of records or new databases from fields.
- Supports arithmetic and logical operators

Key Product Benefits:

- No need to write enquiry and report programs as PHACT-rql is designed for the end user.
- Can be used as an ad hoc or production tool.

PHACT Associates, Ltd.

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New York, NY 10012

Contact:

David Graham, President
212/219-3744

PHACT-sa

Description:

PHACT-sa is a standalone version of the PHACT-dbrm database record manager.

Host H/W:

VAX 11/780

Host S/W:

UNIX System III

Target H/W:

Series 32000-based
microcomputer systems

Target S/W:

UNIX and its derivatives

Language:

Standard UNIX C

Availability Date:

Now

Key Product Features:

- A UNIX filter which will manipulate a PHACT ISAM-like database
- Easy to use syntax, both interactive and background
- Manipulates multiple databases
- ASCII I/O; usable with shell script files

Key Product Benefits:

- Gives all the benefits of database manipulation without writing code
- Easily adapted to existing applications
- No longer need to be concerned with data storage and manipulation

Procedamos

8655 Landis View
Rosemead, CA 91770

Contact:

Jim Flournoy
818/288-1755

DATABASE Management System

Description:

Multi-user, multi-file, multi-tasking
Relational DBMS

Host H/W:

N/A

Host S/W:

N/A

Target H/W:

Series 32000-based systems,
single or multiprocessor

Target S/W:

XENIX, UNIX, or our transaction
processing O.S. or customer's
O.S., Pascal, CP/M, Coherent,
etc. Will port to GENIX upon firm
request from Series 32000
customer.

Language:

RSL — Relational Systems
Language (a DBMS compiler
optimized for size) and Assembler
where needed for speed

Interface/Compatible with other National Software?

We can interface with any NSC
O.S. or languages and/or
customer O.S./languages. The
Physical Record Manager is
available from any language.

Availability Date:

23 February 1983

Key Product Features:

- Multi-user integrity
- Logical success units
- Warm restart
- Transaction logging
- Transaction commit-abort with
roll back
- Virtual memory
- 20 files open per user
- Supports production quality
applications
- Some applications available

Key Product Benefits:

- Rapid application development
with DBMS and 4th GL
- Easy maintenance with Data
Dictionary
- Ability to restructure schema
- Rugged transaction oriented
system warm restart
- Networking capability
- Runs large numbers of users
- Query, Reporter, Screen
Painter, Data Dictionary Fourth
Gen. Lang.
- UNIX enhancements available
without DBMS.
- Data Dictionary may be
available to certain
programming languages
providing "Common Data
Dictionary" for non-DBMS
users.

Procedamos

8655 Landis View
Rosemead, CA 91770

Contact:

Jim Flournoy
818/288-1755

Procedamus X.25

Description:

Full CCITT specs. We guarantee acceptance by packet-switching system.

Host H/W:

N/A

Host S/W:

Pascal or C

Target H/W:

Series 32000 with any of several communication chips or SI/O

Target S/W:

Requires Pascal, C, or optional FORTRAN and Assembler

Language:

Pascal — C or RATFOR optional
Assembler required

Availability Date:

February 1984

Key Product Features:

- Small size
- Comm. chip independent
- Write for details

Quadratron Systems, Inc.

15760 Ventura Blvd., Suite 1032
Encino, CA 91436

Contact:

Vanessa Abbe, Marketing Coordinator
818/789-8588

Q-CALL

Description:

Electronic phone directory

Host H/W:

Any h/w with a C compiler

Host S/W:

UNIX 3, V7, 4.1, 4.2, 5, XENIX,
VENIX; MS/DOS, PC/DOS

Target H/W:

Target S/W:

UNIX 3, V7, 4.1, 4.2, 5, XENIX

Language:

C

Availability Date:

February 1984

Key Product Features:

- Menu driven
- Auto-dial capability with complete port configuration
- Alpha directory as well as an eight category, special directory
- Print capabilities
- Complete cross-reference capability

Key Product Benefits:

- Easy-to-use menus
- Easy-to-edit and update phone numbers
- Terminal and printer independent
- Written in C for portability

Quadratron Systems, Inc.

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Encino, CA 91436

Contact:

Vanessa Abbe, Marketing Coordinator
818/789-8588

Q-DATE

Description:

Electronic calendar

Host H/W:

Any h/w with a C compiler

Host S/W:

UNIX 3, V7, 4.1, 4.2, 5, XENIX,
VENIX; MS/DOS, PC/DOS

Target H/W:

NS32000-based systems

Target S/W:

UNIX 3, V7, 4.1, 4.2, 5, XENIX

Language:

C

Availability Date:

February 1984

Key Product Features:

- 3 displays available: monthly, weekly, and daily
- Insert, delete, move, replace, and copy appointments
- Search for appointments on the monthly display
- Set alarms and reminders
- Multi-calendar scheduling
- Print all three displays

Key Product Benefits:

- Function-key oriented, easy to use
- Complete documentation
- Written in C for portability

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818/789-8588

Q-FORM

Description:

Form designer

Host H/W:

Any h/w with a C compiler

Host S/W:

UNIX 3, V7, 4.1, 4.2, 5, XENIX,
VENIX; MS/DOS, PC/DOS

Target H/W:

Series 32000-based systems

Target S/W:

UNIX 3, V7, 4.1, 4.2, 5, XENIX

Language:

C

Availability Date:

February 1984

Key Product Features:

- Has its own screen builder and manager
- Print forms with or without data
- Pattern matching on fields
- Interactive, prompt-oriented

Key Product Benefits:

- Easy-to-use, prompt-oriented
- Can be used to capture data for almost any program
- Easy to edit forms and fill in data
- Terminal and printer independent
- Written in C for portability

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Encino, CA 91436

Contact:

Vanessa Abbe, Marketing Coordinator
818/789-8588

Q-MAIL

Description:

Electronic mail

Host H/W:

Any h/w with a C compiler

Host S/W:

UNIX 3, V7, 4.1, 4.2, 5; MS/DOS;
PC/DOS; XENIX, VENIX

Target H/W:

Series 32000-based systems

Target S/W:

UNIX 3, V7, 4.1, 4.2, 5, XENIX

Language:

C

Availability Date:

February 1984

Key Product Features:

- Inbox, outbox feature
- Undelete mail (wastebasket feature)
- Send mail to other systems
- Modify aliases easily
- Certified and classified mail

Key Product Benefits:

- Easy-to-use menu formats
- Can be used with any editor, including Q-ONE or Q-NOTE
- Mailing lists and aliases are easily modifiable
- Messages can be printed
- Terminal and printer independent
- Written in C for portability

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Q-MATH

Description:

Calculator

Host H/W:

Any h/w with a C compiler

Host S/W:

UNIX 3, V7, 4.1, 4.2, 5, XENIX,
VENIX; MS/DOS, PC/DOS

Target H/W:

Series 32000-based systems

Target S/W:

UNIX 3, V7, 4.1, 4.2, 5, XENIX

Language:

C

Availability Date:

February 1984

Key Product Features:

- Displays alpha or numeric entries on a tape
- Insert, delete, modify, and duplicate entries
- 640 entries per tape — can be filed on disk
- 26 memory locations
- Nested calculations
- Automatic recalculation

Key Product Benefits:

- Easy-to-use function keys
- Complete help text accessible from the “tape”
- Easily store and retrieve “tape” files via function keys
- Terminal and printer independent
- Written in C for portability

Quadratron Systems, Inc.

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Contact:

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818/789-8588

Q-MENU

Description:

Integrated menu designer and manager

Host H/W:

Any h/w with a C compiler

Host S/W:

UNIX 3, V7, 4.1, 4.2, 5; MS/DOS;
PC/DOS; XENIX, VENIX

Target H/W:

Series 32000-based systems

Target S/W:

UNIX 3, V7, 4.1, 4.2, 5, XENIX

Language:

C

Availability Date:

February 1984

Key Product Features:

- Menu graphics
- Multi-level/nested menus
- Supports all languages
- Handles data transfer
- Executes operating system commands

Key Product Benefits:

- Will access and execute any program in any language
- Easy to maintain script file for changing menus
- Written in C for portability
- Easy to learn with complete documentation
- Terminal and printer independent

Quadratron Systems, Inc.

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Contact:

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818/789-8588

Q-NOTE

Description:

Electronic notepad/index card

Host H/W:

Any h/w with a C compiler

Host S/W:

UNIX 3, V7, 4.1, 4.2, 5, XENIX,
VENIX; MS/DOS, PC/DOS

Target H/W:

Series 32000-based systems

Target S/W:

UNIX 3, V7, 4.1, 4.2, 5, XENIX

Language:

C

Availability Date:

February 1984

Key Product Features:

- Cross-reference and sort notes by heading
- Contains its own editor
- Delete, modify, copy, or print notes
- Create custom note formats

Key Product Benefits:

- Easy-to-use index card format
- Sort menus
- Can be used with electronic mail
- Terminal and printer independent
- Written in C for portability

Quadratron Systems, Inc.

15760 Ventura Blvd., Suite 1032
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Contact:

Vanessa Abbe, Marketing Coordinator
818/789-8588

Q-OFFICE

Description:

Office automation software package including word processing, calendar, mail, notepad, form generator, menu generator, phone directory, and calculator

Host H/W:

Any hardware with a C compiler

Host S/W:

UNIX 3, V7, 4.1, 4.2, 5; MS/DOS;
PC/DOS; XENIX, VENIX

Target H/W:

Series 32000-based systems

Target S/W:

UNIX 3, V7, 4.1, 4.2, 5, XENIX

Language:

C

Availability Date:

February 1984

Key Product Features:

- Integrated
- Complete — including:
 - Q-ONE, word processing
 - Q-DATE, electronic calendar
 - Q-MENU, menu generator
 - Q-FORM, forms generator
 - Q-MAIL, electronic mail
 - Q-NOTE, electronic notepad
 - Q-CALL, electronic phone directory
 - Q-MATH, calculator

Key Product Benefits:

- User-friendly, function-key oriented
- Help screens available
- Easy to learn with complete documentation and tutorials written in C for portability
- 128K bytes minimum memory includes termcap and printcap for device independence
- Can be integrated with other application software such as databases and spreadsheets

Quadratron Systems, Inc.

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Contact:

Vanessa Abbe, Marketing Coordinator
818/789-8588

Q-ONE

Description:

Word Processor

Host H/W:

Any hardware with C compiler

Host S/W:

UNIX 3, V7, 4.1, 4.2, 5, XENIX,
VENIX; MS/DOS, PC/DOS

Target H/W:

Series 32000-based systems

Target S/W:

UNIX 3, V7, 4.1, 4.2, 5, XENIX

Language:

C

Availability Date:

February 1984

Key Product Features:

- Complete editing functions — insert, delete, move, copy, mark, indent
- Complete formatting, including an extended format menu
- Multi-windowing (up to 8 windows)
- Records processing, including mail merge
- Spelling checker, automatic hyphenation/pagination, table of contents and index

Key Product Benefits:

- Function-key oriented, Wang-like, easy to use
- Full help screens — excellent tutorial documentation
- Integrated, easy to bring database and spreadsheet files over
- Use to edit source code or do advanced photocomposition
- Terminal and printer independent
- Written in C for portability

Quality Software Products Co.

348 South Clark Drive
Beverly Hills, CA 90211

Contact:
Ellis Horowitz
President
213/659-1560

Q-CALC

Description:

A UNIX-based spreadsheet program including all usual features plus graphics.

Host H/W:

VAX 11/750, 780, Callan
UNISTAR, CODATA, IBM PC

Host S/W:

UNIX 4.1 bsd, 4.2 bsd, System
III, System V

Target H/W:

Series 32000-based systems

Target S/W:

UNIX 4.1 bsd, 4.2 bsd, System
III, System V

Language:

C

Interface/Compatible with other National Software?

Yes, this product is easily
recompiled under C for the Series
32000.

Availability Date:

Now

Key Product Features:

- Large spreadsheet interface to UNIX
- Full set of business functions
- Complete graphics including bar charts, line charts, pie charts
- Internationalized forms processing

Key Product Benefits:

- Simple user interface, all commands are visible
- Easy to perform modeling
- Automatic or manual recalculation

**Silicon Valley
Software, Inc.**

10011 North Foothill Blvd., Suite 111
Cupertino, CA 95014

Contact:

R. Steven Glanville
President
408/725-8890

SVS BASIC Plus Interpreter

Description:

High speed interpreter which implements a dialect of BASIC which is greatly enhanced

Host H/W:

N/A

Host S/W:

N/A

Target H/W:

Series 32000-based computer systems

Target S/W:

UNIX/GENIX plus other operating systems

Language:

Pascal

Interface/Compatible with other National Software?

Yes, the interpreter runs under GENIX.

Availability Date:

Now

Key Product Features:

- Subroutines and multi-line functions with parameters
- User Error Handling and RESUME functions
- Full complement of high-level control structures
- All commonly used arithmetic, trigonometric, transcendental, and string subroutines are available
- String arithmetic

Key Product Benefits:

- Extensive I/O facilities
- Virtual Arrays which can be used to provide a convenient random access file capability or to stimulate an array data structure which would otherwise be too large to fit into available memory
- Full access to underlying operating system
- Matrix operations

Silicon Valley Software, Inc.

10011 North Foothill Blvd., Suite 111
Cupertino, CA 95014

Contact:
R. Steven Glanville
President
408/725-8890

SVS “C” Compiler

Description:

Complete native code compiling system which is compatible with the current Bell Labs C

Host H/W:

N/A

Host S/W:

N/A

Target H/W:

Series 32000-based computer systems

Target S/W:

UNIX/GENIX plus other operating systems

Language:

Pascal

Interface/Compatible with other National Software?

Yes, the compiler runs under GENIX.

Availability Date:

Now

Key Product Features:

- IEEE double precision arithmetic for floating point
- Standard I/O library
- Standard “Malloc” dynamic memory library
- High level control and data structures
- Initialization; macros; portability
- Separate compilation with information hiding

Key Product Benefits:

- Developed by SVS so it is free from UNIX licensing and restrictions
- Four byte “int” type, plus the full complement of signed and unsigned data types of all sizes

**Silicon Valley
Software, Inc.**

10011 North Foothill Blvd., Suite 111
Cupertino, CA 95014

Contact:

R. Steven Glanville
President
408/725-8890

SVS FORTRAN Compiler

Description:

Full ANSI standard FORTRAN 77
for Series 32000

Host H/W:

N/A

Host S/W:

N/A

Target H/W:

Series 32000-based computer
systems

Target S/W:

UNIX/GENIX plus other operating
systems

Language:

Pascal

**Interface/Compatible with
other National Software?**

Yes, the compiler runs under
GENIX.

Availability Date:

Now

Key Product Features:

- Free Source Program Format which makes interactive program entry convenient
- Integer and logical values may be stored as 1 or 2 bytes in addition to normal 4-byte representation
- Access to command line arguments
- FORTRAN routines may be compiled separately or together

Key Product Benefits:

- Available now
- FORTRAN 66 compatibility option
- "A" format is allowed for numeric 110
- Character and non-character objects may be placed in same common area and may be equivalenced controlled
- Initialization of numeric variables with character values

Silicon Valley Software, Inc.

10011 North Foothill Blvd., Suite 111
Cupertino, CA 95014

Contact:
R. Steven Glanville
President
408/725-8890

SVS Pascal Compiler

Description:

A complete optimizing native code for the Series 32000, single and double precision IEEE floating point as well as 2- and 4-byte integer. Dialect is a superset of ISO standard Pascal.

Host H/W:

N/A

Host S/W:

N/A

Target H/W:

Series 32000-based computer systems

Target S/W:

UNIX/GENIX plus other operating systems

Language:

Pascal

Interface/Compatible with other National Software?

Yes, the compiler runs under GENIX.

Availability Date:

Now

Key Product Features:

- Variable length strings and string operations
- Separate compilation with Information Hiding (UNITs)
- Random access, block, interactive I/O
- Option for user control of I/O error handling
- Linkage to external routines written in SVS Pascal, SVS FORTRAN, SVS C
- MOVE LEFT, MOVE RIGHT, and FILL CHAR

Key Product Benefits:

- @ Operator (address of) for variables and procedures
- Integer to Pointer Coersion
- ARGV/ARGC access to command line (operating system permitting)
- OTHERWISE case statement label
- Identifier names checked for significance in their first 31 characters

Softrade International, Inc. Contact:

11 Suzanne Lane
Pleasantville, NY 10570

John Puttre, V.P. Marketing
914/769-7334

C — Preprocessor (C16TR)

Description:

Provides C language capability for Pascal cross software package.

Host H/W:

VAX and PDP11 family including PDP Micro 11, DEC PRO Micro system, PDP 11/23, 11/23 plus, 11/04, 11/24, 11/34, 11/44, 11/70

Host S/W:

NSC's Pascal cross development package or Softrade's Pascal version for PDP family; RSX-11M/RSX-11M-Plus (version 3.2 or later), VMS

Target H/W:

Any Series 32000 based system including standard development boards and systems

Target S/W:

C language programs for Series 32000 family

Language:

Internally developed C.
Call for details.

Interface/Compatible with other National Software?

Yes, this product directly gives C language capability to the Pascal cross software package when running on all DEC equipment.

Availability Date:

27 February 1984

Key Product Features:

- C16TR converts source programs written in C language into PS16 text.
- Supports entire version of C described in Ritchie's, with few minor restrictions
- In addition to all standard C functions Pascal functions are also built in.
- Full support for all source level symbolic debugging provided
- Supports multiple source files
- Interfaces with RTS for writing lower level I/O routines

Key Product Benefits:

- Provides C language capability in Pascal environment and supports all symbolic debugging routines and National's ISE/16 in hardware or software debugging procedures
- C16TR is a C cross translator which permits it to work in conjunction with all other software tools in the Pascal package.
- All functions of Pascal and complete support for ISE/16 in C language are available.

Softrade International, Inc.

11 Suzanne Lane
Pleasantville, NY 10570

Contact:

John Puttre, V.P. Marketing
914/769-7334

Cross Incremental Linker (LINK16)

Description:

LINK permits incremental deletion or replacement of software modules in previously generated executable load files in a software development environment.

Host H/W:

VAX and PDP11 family including PDP Micro 11, DEC PRO Micro system, PDP 11/23, 11/23 plus, 11/04, 11/24, 11/34, 11/44, 11/70

Host S/W:

RSX-11M/RSX-11M-Plus (version 3.2 or later), VMS

Target H/W:

Any Series 32000 based system including standard development boards and systems

Target S/W:

N/A

Interface/Compatible with other National Software?

Yes, this linker permits freely mixing modules written in Pascal, Assembly or C language using Pascal on either the PDP or the VAX to be freely intermingled and then incrementally linked.

Availability Date:

Call

Key Product Features:

- Eliminates unnecessary relinking of all modules when only a few are altered
- Is totally compatible with LINK of National and has all the same features
- Load map for existing load can be generated without relinking.
- Load map for each incremental session available
- Adds, deletes or replaces modules in any previously generated LINK executable file

Key Product Benefits:

- Greatly improves programmer productivity by reducing link time during debugging or testing
- In typical development environment it substantially speeds up software development by taking advantage of the unique link table/module table structure of Series 32000 family, thus eliminating unnecessary relinking of all modules when only a few are altered.
- This greatly encourages the use of a common stable base of working modules since it permits the quick linking of new enhanced or modified modules with the original stable base for experimentation and testing.

Softrade International, Inc. Contact:

11 Suzanne Lane
Pleasantville, NY 10570

John Puttre, V.P. Marketing
914/769-7334

Pascal Converter for Series 32000

Description:

Converts regular Pascal programs over to Softrade's PAS16 utility for recompilation and downloading to any Series 32000 target machine.

Host H/W:

VAX and PDP11 family including PDP Micro 11, DEC PRO Micro system, PDP 11/23, 11/23 plus, 11/04, 11/24, 11/34, 11/44, 11/70

Host S/W:

VAX/VMS or PDP/R SX

Target H/W:

Any Series 32000 based system including standard development boards and systems

Target S/W:

Any existing Pascal program that the user wishes to automatically convert for use on the Series 32000

Language:

Pascal

Interface/Compatible with other National Software?

Yes, this product interfaces with the Pascal software product directly when run on the PDP and interfaces with the VAX version of NSX when the Softrade supplied PAS16 version is used on the VAX system as part of an extended Pascal product line.

Availability Date:

Call

Key Product Features:

- Converts any Pascal source program into PAS16 for recompilation and downloading to Series 32000
- Supports all Pascal functions
- Conversion is automatic and requirement for user intervention are clearly indicated.

Key Product Benefits:

- Permits Pascal programs to be automatically converted and made available for immediate functioning on Series 32000 product
- Is extremely fast with normal Pascal programs of 300 to 400 lines being converted automatically on the slowest DEC equipment within ten minutes
- User interaction for flag items is expected to be less than once in 1,000 lines of code.
- The utility flags any special case where user interaction is required.

Softtrade International, Inc. Contact:

11 Suzanne Lane
Pleasantville, NY 10570

John Puttre, V.P. Marketing
914/769-7334

NSX-16 for the DEC PDP family

Description:

This product is identical in function to National's Pascal cross software development package. The product converts any PDP based processor to a complete development system for the Series 32000 family and fully supports all debugging and emulation facilities provided by ISE/16.

Host H/W:

All DEC PDP11 systems including PDP Micro 11, DEC PRO Micro system, PDP 11/23, 11/23 plus, 11/04, 11/24, 11/34, 11/44, 11/70

Host S/W:

RSX-11M/RSX-11M-Plus
Operating System (Version 3.2 or later)

Target H/W:

Any Series 32000 based system including standard development boards and systems

Language:

Pascal, C, Assembler

Interface/Compatible with other National Software?

Yes, this product was derived from and developed in conformance to Pascal.

Availability Date:

27 February 1984

Key Product Features:

- Cross Assembler for Series 32000, Pascal Cross Compiler, C language translator, Cross Linker, Librarian, Run Time Support for Pascal, Floating Point Library, Prom Generation, Symbolic Debugger for C, Pascal and Assembler, Symbolic Debugger for Interface and Use of ISE/16, Monitor for Target System or DB32016 Evaluation Board

Key Product Benefits:

- Fully compatible with National's Pascal systems for the VAX and SYS32
- Supports symbolic debugging and all other functions of ISE/16 on the PDP
- Inexpensive development system for full family of Series 32000 micro

AVL

Description:

Processor for AVL, a new rapid prototyping and applications development language

Host H/W:

Any machine that runs UNIX Version 7 or later (including GENIX, XENIX, Uniplus + , HP-UX)

Host S/W:

UNIX Version 7 or later

Target H/W:

Any machine that runs UNIX Version 7 or later (including GENIX, Xenix, Uniplus + , HP-UX)

Target S/W:

UNIX Version 7 or later

Language:

C and AVL (for some library routines)

Interface/Compatible with other National software?

Yes, the AVL library includes equivalents of the standard C library system function calls providing full access to the GENIX environment. The AVL compilation process is also integrated to GENIX.

Availability Date:

Now

Key Product Features:

- AVL language has syntax similar to C
- Unique single datatype: dynamic tree with *string* subscripts and values
- Datatype may be viewed as dynamically controlled, sparse N-dimensional array
- Variables may reside in memory or on disk; access is the same for both
- String handling including regular expression pattern matching built in

Key Product Benefits:

- Dynamic loading and unloading of functions
- Read/write/shape change access may be applied to variables
- Disk variables may be shared among users
- Interactive source level debugger; data directed editor
- Large runtime library; many utility programs
- Extensive manual pages plus a book: The AVL Programming Language
- Compilation errors cause the user to be dropped into a chosen editor to correct program errors.

Software Innovations, Inc. Contact:

440 Amherst Street
Nashua, NH

Marta Greenberg, Vice President
603/883-9300

Basic-L

Description:

Processor for the Basic-L language; translates Basic-L code to C then compiles the C code

Host H/W:

Any machine that runs UNIX Version 7 or later (including GENIX, XENIX, Uniplus + , HP-UX)

Host S/W:

UNIX Version 7 or later

Target H/W:

Any machine that runs UNIX Version 7 or later (including GENIX, XENIX, Uniplus + , HP-UX)

Target S/W:

UNIX Version 7 or later

Language:

C

Interface/Compatible with other National Software?

Yes, allows access to full facilities of GENIX from any Basic-L program through the "perform()" function (similar to the "system()" function in C). Basic-L use regular UNIX files for disk data.

Availability Date:

Now

Key Product Features:

- Basic-L language is a hybrid of C and BASIC
- BASIC style string and matrix manipulation; subscript checking
- C style functions, if statements, for, while, and do loops
- GOSUB/RETURN constructs
- Runtime library included

Key Product Benefits:

- Combines "safety" features of BASIC with advanced control of C
- Uses regular UNIX files; user may impose any record structure needed
- May link C functions into a Basic-L executable program
- All C preprocessor facilities available in Basic-L code
- Useful intermediate language for programmers moving from BASIC to C
- Source code included

Software Innovations, Inc. Contact:
440 Amherst Street
Nashua, NH

Bill Ezell, President
603/883-9300

VC

Description:

Full screen spreadsheet running under UNIX

Host H/W:

Any machine that runs UNIX Version 7 or later (including GENIX, XENIX, Unipuls + , HP-UX)

Host S/W:

UNIX Version 7 or later

Target H/W:

Any machine that runs UNIX Version 7 or later (including GENIX, XENIX, Uniplus + , HP-UX)

Target S/W:

UNIX Version 7 or later

Language:

C

Interface/Compatible with other National software?

Yes, well integrated to GENIX. Shell escape command provided in vc. Data values may be retrieved from external process. Spreadsheets saved in text form may be manipulated with standard utilities.

Availability Date:

Now

Key Product Features:

- Large spreadsheet: 1000 rows by 32,000 columns
- Screen automatically updated whenever values change
- Calculations ordered: minimum amount of recalculations performed
- Provides normal math operations plus extended functions
- Spreadsheets saved in both text and binary form; may be merged

Key Product Benefits:

- True point-by-point dependencies
- Can fetch data from external processes to use in spreadsheet
- Simple user interface — simple set of commands
- Extensive on-line help; optional user-defined help may be added
- Terminal independent (uses U.C. Berkeley termcap package)
- Well integrated to Unix
- Interactive tutorial for learning vc included

Software Innovations, Inc.

440 Amherst Street
Nashua, NH

Contact:

David Dick, Vice President
603/883-9300

vf

Description:

Forms-oriented screen management package for UNIX

Host H/W:

Any machine that runs UNIX Version 7 or later (including GENIX, XENIX, Uniplus + , HP-UX)

Host S/W:

UNIX Version 7 or later

Target H/W:

Any machine that runs UNIX Version 7 or later (including GENIX, XENIX, Uniplus + , HP-UX)

Target S/W:

UNIX Version 7 or later

Language:

C

Interface/Compatible with other National software?

Yes, well integrated to GENIX. Shell escape command provided in vf. Data validation may be performed by external processes. Data fields may be filled in with data retrieved from external processes. Form definitions, menu definitions, and data files are all ASCII text files and may be manipulated with standard utilities.

Availability Date:

Now

Key Product Features:

- Form definition files define display and validation criteria for fields
- vf allows entry, retrieval, and modification of data fields
- Data files are simple ASCII text files
- Can be used as a menu package or a combined menu and forms package
- Form and menu driven definition files are regular vf data files

Key Product Benefits:

- Form and menu definition files can be created and modified using vf
- External processes can be used to validate and even provide data
- Informative user interface for novices and casual users
- Concise interface for experienced users
- Can move around between fields in a form; handles multi-page forms
- Terminal independent (uses U.C. Berkeley termcap package)

Solutionware Corporation

1283 Mt. View-Alviso Road, Suite B
Sunnyvale, CA 94089

Contact:

Charles Mears
Director of Marketing
408/745-7818

NSX-16

Description:

CP/M hosted Cross Software for the Series 32000 Assembler, Debugger (w/w/o ISE support), Pascal Compiler, Utilities

Host H/W:

Practically any Z80 with at least 56K of memory

Host S/W:

CP/M

Target H/W:

DB32016 board, ISE, or any Series 32000-based system

Target S/W:

N/A

Language:

Pascal, Z80 Assembler

Interface/Compatible with other National Software?

Yes, provides the functionality of Pascal. Since this package is designed to run entirely on Z80 based CP/M systems, exact object file compatibility is not necessary.

Availability Date:

6 February 1984

Key Product Features:

- ASM produces either relocatable or hex output symbolic debugging for the DB32016 board and ISE/16. Pascal allows high level language programming for new product development.

Key Product Benefits:

- Low H/W cost for Series 32000 development support. High level language development reduces development and maintenance costs. Prompt, courteous customer support, various packaging options available.

Symmetric Computer Systems Corporation

633 North Santa Cruz Avenue
Los Gatos, CA 95030

Contact:
Bill Jolitz
President
408/354-1500

Binary GENIX Porting Package

Description:

Documentation and tools to port our generic binary GENIX system. Has a UNIX "BIOS" interface.

Host H/W:

Currently SYS32, S/750, VAX 11, PDP-11, MC68000, Z8000

Host S/W:

UNIX (Version 7, 4.1 bsd, 4.2 bsd, SYSTEM V)

Target H/W:

Series 32000-based systems

Target S/W:

N/A

Language:

Berkeley "C" (long identifiers)

Interface/Compatible with other National Software?

Yes, fully compatible with GENIX (is derived from GENIX).

Availability Date:

27 March 1984

Key Product Features:

- National Semiconductor Software Standard
- No source license required
- Floating point hardware is optional.
- Requires minimal UNIX kernel expertise
- High performance virtual memory operating system
- Berkeley 4.1 bsd ported to the Series 32000 family

Key Product Benefits:

- Customer can link GENIX kernel with customer-supplied device drivers and download and run GENIX on customer's target hardware
- Customer does not need an AT&T UNIX source license
- Runs in "native" environment

Symmetric Computer Systems Corporation

633 North Santa Cruz Avenue
Los Gatos, CA 95030

Contact:
Bill Jolitz
President
408/354-1500

Cross-Support Package

Description:

Assembler, C-compiler, linker, and downloader for Series 32000-series processors

Host H/W:

Series 32000-series, PDP-11, VAX-11, MC68000, Z8000

Host S/W:

UNIX (Version 7, 4.1 bsd, 4.2 bsd, SYSTEM V)

Target H/W:

Series 32000-series

Target S/W:

N/A

Language:

C

Interface/Compatible with other National Software?

Derived from GENIX. Fully compatible with GENIX.

Availability Date:

Call

Key Product Features:

- Works with many common hosts
- Easily transported to new environment
- Standard National Semiconductor assembler mnemonics
- GENIX compatible object file format

Key Product Benefits:

- Concise assembly level and source level debuggers
- Source provided for Symmetric downloader
- Standard interchangeable object file format across all hosts
- Convenient run-time support library

Symmetric Computer Systems Corporation

633 North Santa Cruz Avenue
Los Gatos, CA 95030

Contact:
Bill Jolitz
President
408/354-1500

Prolog/16000, Lisp/16000

Description:

Prolog and Lisp environments for National Series 32000 series processors

Host H/W:

Series 32000-Series

Host S/W:

GENIX

Target H/W:

Series 32000-based systems

Target S/W:

GENIX

Language:

C and Lisp

Interface/Compatible with other National Software?

Yes, object file compatible with GENIX and all GENIX language tools. Relies on 32000 modular software feature.

Availability Date:

27 March 1984

Key Product Features:

- Full implementation of Prolog
- Mac Lisp styled Lisp
- Modular compiler format for fast, dynamic, GENIX-compatible object file formats
- Standard Berkeley Lisp Library

Key Product Benefits:

- Both products may mix modules of opposite type.
- Hardware floating, point support
- Full Prolog-UNIX interface
- Provided with the PEARL A.I. package installed
- VAX file compatibility

Syntactics Corporation

3333 Bowers Avenue, Suite 145
Santa Clara, CA 95051

Contact:

Jill Templeton
Product Support Manager
408/727-6400

CrystalWriter

Description:

Object-based Word Processing System, designed for managers, secretaries, and professionals, including programmers.

Host H/W:

N/A

Host S/W:

UNIX

Target H/W:

Series 32000-based
microcomputer systems

Target S/W:

All flavors of UNIX, including
GENIX, XENIX, and UNITY

Language:

Pascal and C

Interface/Compatible with other National Software?

Yes, compatible with, and readily portable to, all variants of UNIX, including System V, Berkeley, GENIX, XENIX, and UNITY.

Availability Date:

60 days following request from
computer manufacturer

Key Product Features:

- Plain English commands
- Clear, concise dynamic help on screen
- Easy-to-understand documentation and direct telephone support
- Predefined and user-definable document layouts
- Automatic formatting and reformatting of whole documents, on the screen
- Spooler handles multiple printers, multiple queues, sheets and forms

Key Product Benefits:

- For the occasional user: no need to relearn constantly
- For the full-time user: fast, efficient, automatic
- For the engineer: it's a superior multi-file programming editor, too
- For the whole office: coordination of documents and document layouts
- Supports many peripherals, AND takes advantage of their features
- Coordinates with UNIX utilities, including pipes and spooler

Tartan Laboratories, Inc.

477 Melwood Avenue
Pittsburgh, PA 15213

Contact:

Maria Markwell, Asst to VP Mktg and Sales
412/621-2210

Tartan C

Description:

Highly optimizing C compiler

Host H/W:

Series 32000-based
microcomputer systems

Host S/W:

UNIX 4.2 bsd

Target H/W:

Series 32000-based
microcomputer systems

Target S/W:

GENIX, UNIX 4.1 and 4.2 bsd

Language:

Tartan proprietary language

Interface/Compatible with other National software?

Yes, Tartan C runs on National's
SYS32 running GENIX.

Availability Date:

Summer 1984

Key Product Features:

- Output can be linked with code from other Tartan compilers
- Provides optional array bounds check at runtime
- Provides portability warnings
- Uses standard C libraries

Key Product Benefits:

- Produces compact, fast object code for runtime efficiency
- Superior compile-time diagnostics on terminal or in listing file
- Compatible with Tartan C compilers for DEC VAX
- Compatible with Western Electric and Berkeley C compilers
- Includes Installation Guide, User's Guide, Product Support Guide, and C Language
- Reference by Harbison and Steele

Tartan Laboratories, Inc.

477 Melwood Avenue
Pittsburgh, PA 15213

Contact:

Maria Markwell, Asst to VP Mktg and Sales
412/621-2210

Tartan Modula-2

Description:

Highly optimizing Modula-2 compiler

Host H/W:

Series 32000-based microcomputer systems

Host S/W:

UNIX 4.2 bsd

Target H/W:

Series 32000-based microcomputer systems

Target S/W:

GENIX, UNIX 4.1 and 4.2 bsd

Language:

Tartan proprietary language

Interface/Compatible with other National software?

Yes, Tartan Modula-2 runs on National's SYS32 running GENIX.

Availability Date:

Summer 1984

Key Product Features:

- Output can be linked with code from other Tartan compilers
- Provides separate compilation capabilities
- Low level facilities provide access to machine-level operations
- Strict type checking

Key Product Benefits:

- Produces compact, fast object code for runtime efficiency
- Superior compile-time diagnostics on terminal or in listing file
- Compatible with Tartan Modula-2 compilers for DEC VAX
- Includes Installation Guide, User's Guide, and Product Support Guide

TECSI-Software

29, rue des Pyramides
Paris, France F-75001

Contact:

Raffi Aslanian, Director
(33) 1-296.15.70

RTX16 — Real Time Executive

Description:

Real-time user-configurable executive for Series 32000-based microcomputer systems

Host H/W:

VAX 11/750,780

Host S/W:

VMS with Pascal package

Target H/W:

Any Series 32000-based microcomputer systems

Target S/W:

N/A

Language:

Pascal

Interface/Compatible with other National Software?

Yes, Pascal can be used for developing real-time applications supported by RTX16. These applications can be written in ASM (Assembler) and/or Pascal for which a run-time library interfacing RTX16 is available.

Availability Date:

Now

Key Product Features:

- Provides a full set of real-time functionalities
- Integrated in Pascal
- Supports all configuration needs
- Includes a comprehensive file system
- User-extensible to other peripherals and/or O.S. functionalities

Key Product Benefits:

- Written in Pascal (portable executive)
- ROMable
- Provides a standard peripheral interface
- Supports applications written in Pascal (Portable applications)
- Available in object or source code form; various purchasing/pricing options

Topexpress Ltd

13/14 Round Church Street
Cambridge CB5 8AD U.K.

Contact:

Dr. Richard Evans,
Series 32000 Product Manager
223 355427

ALGOL68C Compiler

Description:

ALGOL68C compiler for Series 32000-based systems

Host H/W:

VAX or Series 32000 system

Host S/W:

UNIX/GENIX

Target H/W:

Series 32000-based systems

Target S/W:

Any suitable operating system

Language:

ALGOL68C

Interface/Compatible with other National Software?

Yes, compiler can be adapted for use with Pascal or GENIX.

Availability Date:

Now

Key Product Features:

- Close compatibility with standard ALGOL68
- Relocatable code
- Facilities for separate compilation
- Cross reference facility

Key Product Benefits:

- May be used for cross or native compilation
- Highly portable
- Various pricing options
- Strongly-typed block-structured language

Topexpress Ltd
13/14 Round Church Street
Cambridge CB5 8AD U.K.

Contact:
Dr. Richard Evans,
Series 32000 Product Manager
223 355427

Basic Interpreter

Description:

Basic Interpreter

Host H/W:

N/A

Host S/W:

N/A

Target H/W:

Any Series 32000-based systems

Target S/W:

Any suitable operating system

Language:

BCPL

Availability Date:

Now

Key Product Features:

- String handling routines include pattern matching facility
- INPUT and PRINT can be used with sequential and direct access files
- Debug features include trace points break points, 'break after n steps'
- PRINT USING for format control
- HELP facility

Key Product Benefits:

- Can be supplied to run on many host machines for compatibility/testing
- Debug features allow faster code production
- Can produce intermediate code to avoid having to distribute source code
- Can be tailored to particular needs
- Various purchasing/pricing options

Topexpress Ltd

13/14 Round Church Street
Cambridge CB5 8AD U.K.

Contact:

Dr. Richard Evans,
Series 32000 Product Manager
223 355427

BCPL Compiler

Description:

BCPL Compiler producing code
for Series 32000 systems

Host H/W:

VAX Series 32000

Host S/W:

VMX/UNIX

Target H/W:

Series 32000-based systems

Target S/W:

Any suitable operating system

Language:

BCPL

Interface/Compatible with other National Software?

Yes, compiler can be adapted for
use with Pascal or GENIX.

Availability Date:

Now

Key Product Features:

- Standard language with many extensions
- Conditional compilation
- External symbols
- Efficient code produced
- Relocatable code

Key Product Benefits:

- Language is used widely in Europe
- May be used for cross or native compilation
- Various pricing options
- Highly portable

Topexpress Ltd

13/14 Round Church Street
Cambridge CB5 8AD U.K.

Contact:

Dr. Richard Evans,
Series 32000 Product Manager
223 355427

FORTRAN 77 Compiler

Description:

ANSI standard FORTRAN 77 compiler producing code for a Series 32000-based machine

Host H/W:

VAX or Series 32000 system

Host S/W:

VMS/UNIX/GENIX

Target H/W:

Series 32000-based systems

Target S/W:

Any suitable operating system

Language:

BCPL

Interface/Compatible with other National Software?

Yes, compiler can be adapted for use on Pascal or GENIX.

Availability Date:

Now

Key Product Features:

- Relocatable code
- FORTRAN 66 compatibility option
- Produces efficient and compact code
- Cross reference and storage map options
- Lower case accepted in source programs

Key Product Benefits:

- May be used for cross or native compilation
- ROMable
- Various pricing options
- Written in BCPL for portability

Topexpress Ltd
13/14 Round Church Street
Cambridge CB5 8AD U.K.

Contact:
Dr. Richard Evans,
Series 32000 Product Manager
223 355427

Scientific Word Processor

Description:

Native Mode Scientific Word Processor specifically designed for producing Scientific Reports

Host H/W:

N/A

Host S/W:

N/A

Target H/W:

Series 32000-based systems

Target S/W:

Any suitable operating system

Language:

BCPL

Availability Date:

Now

Key Product Features:

- Mechanisms to simplify specification of equations, including nested fractions
- 90 extra characters for greek/maths
- Macro facilities for commonly used phrases and expressions
- Screen editor can be used for editing programs and data files

Key Product Benefits:

- Screen editor can be configured for most VDUs, with or without greek characters
- Formatter can be adapted for different printers
- Spelling checker available
- Various purchasing/pricing options

UniComp Corporation

202 Plaza Towers
Springfield, MO 65804

Contact:

Steve Turpin, Prod. Mgr.
417/883-6800

UniGen

Description:

Interactive application generator for UNIX Systems with A.I. features

Host H/W:

Any with UNIX

Host S/W:

UNIX (V7 or later)

Target H/W:

Series 32000-based systems

Target S/W:

Any UNIX

Language:

C

Interface/Compatible with other National Software?

Yes, will run under GENIX

Availability Date:

Now

Key Product Features:

- Menu and prompt generators
- Terminal conversation generator
- Keyed record files
- Data manipulation
- Completely interactive — easy to use

Key Product Benefits:

- Makes UNIX usable by anyone
- Makes UNIX look like applications
- Saves programming costs
- Gets full use from UNIX
- Easy to customize UNIX interface

UniComp Corporation

202 Plaza Towers
Springfield, MO 65804

Contact:

Steve Turpin, Prod. Mgr.
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UniMerge

Description:

Records management for UNIX

Host H/W:

68000, 8086

Host S/W:

UNIX

Target H/W:

Series 32000-based systems
upon customer request

Target S/W:

UNIPLUS, XENIX, UNIX
System V

Language:

C

Availability Date:

Now

Key Product Features:

- Keyed record access for UNIX
- User defined files
- ser defined record lay-out
- Universal sort and select
- Automatic report and form letter merging

Key Product Benefits:

- Direct access to records by key
- Maintains keyed record files
- May be used like a DBMS
- Hashing gives fast access
- Compatible with standard UNIX utilities

Unidot Systems, Inc.

602 Park Point Drive
Golden, CO 80401

Contact:

George Tyler, Marketing Manager
303/526-9263

ASMx16

Description:

Series 32000 cross-assembler

Host H/W:

PDP11, ONYX

Host S/W:

UNIX

Target H/W:

Series 32000-based systems

Target S/W:

UNIX

Language:

C

Interface/Compatible with other National Software?

Yes, ASMx16 is a superset of Series 32000 cross-assembler.

Availability Date:

Now

Key Product Features:

- Super-set of Series 32000 cross-assembler
- Intelligent optimization of forward reference displacement sizes
- Static relocation-pointers and descriptors
- Macros
- Conditional assembly
- Include files

Key Product Benefits:

- Fast (30001pm on PDP11-34)
- Standardization mnemonic set (Series 32000)

Unidot Systems, Inc.

602 Park Point Drive
Golden, CO 80401

Contact:

George Tyler, Marketing Manager
303/526-9263

LDx16

Description:

Series 32000 cross linkage editor

Host H/W:

PDP11, ONYX

Host S/W:

UNIX

Target H/W:

Series 32000-based systems

Target S/W:

UNIX

Language:

C

Interface/Compatible with other National Software?

Yes, the output format is identical
to that produced by LD, the
GENIX link editor.

Availability Date:

Now

Key Product Features:

- Output files format identical to
that produced by the GENIX
link editor

Unidot Systems, Inc.

602 Park Point Drive
Golden, CO 80401

Contact:

George Tyler, Marketing Manager
303/526-9263

Noram16

Description:

Hardware debug monitor for the Series 32000 family

Host H/W:

Any hardware supporting an assembler/cross assembler for the Series 32000 family

Host S/W:

Any assembler/cross assembler supporting standard Series 32000 mnemonics

Target H/W:

Series 32000-based system

Target S/W:

N/A

Language:

Series 32000 assembly language

Interface/Compatible with other National Software?

Yes, will download programs from a GENIX host system

Availability Date:

Now

Key Product Features:

- Needs no RAM to run, doesn't use the stack pointer
- Supports 2 serial channels
- Transparent mode connects local terminal to host port
- Downloads program from host via either serial channel
- Memory fill, display and testing commands

Key Product Benefits:

- Configurable for specific hardware, assembly language source provided
- Can be loaded and run at any starting address
- Small object code size (approximately 2K bytes)
- Proven debug software makes hardware development/debugging easier

Unified Software Systems

P.O. Box 2644
New Carrollton, MD 20784

Contact:

Arne A. Henden, Owner
301/552-9590

UNIFORTH

Description:

FORTH-79 Standard programming language available standalone or cross-compileable from many hosts

Host H/W:

Any UNIFORTH system, such as Z80 CP/M, IBM PC, RSX-11

Host S/W:

Almost all micro operating systems, many standalone FORTH systems

Target H/W:

DB32016, most Series 32000-based systems

Target S/W:

Standalone (UNIFORTH acts as its own operating system)

Language:

FORTH

Availability Date:

Now

Key Product Features:

- Fast, compact, interactive
- Full 32016 macro assembler
- Floating point support (software or 32081)
- Compatible with all other UNIFORTH supported processors

Key Product Benefits:

- Available now
- Various versions/pricing
- Interactive, extremely easy to debug
- Can use target system for debug and development

UniPress Software, Inc.

1164 Raitan Avenue
Highland Park, NJ 08904

Contact:
Customer Service
201/985-8000

GOSLING EMACS

Description:

EMACS is an advanced, extensible, multi window screen editor

Host H/W:

Series 32000 (or any other 32-bit machine with 512K memory and UNIX)

Host S/W:

UNIX — bsd 4.1 or 4.2
UNIX — System III or V

Target H/W:

Series 32000-based systems with a minimum of 512K bytes of RAM

Target S/W:

GENIX, UNIX — bsd 4.1 or 4.2
UNIX System III and V

Language:

C

Availability Date:

2 February 1984

Key Product Features:

- Multi-window editor with many commands. Several files can be edited simultaneously
- User extensible through key bindings, macros, and μ LISP programming language
- Shell windows can be edited for a record of a session
- Programmer assist through provided μ LISP functions for C language
- Pascal language, "make," mail, etc.

Key Product Benefits:

- Multiple files may be edited at one time
- Editing and running of C or Pascal programs is much easier
- Shell windows allow simultaneous execution and editing; and allow full session control
- Key bindings and μ LISP routines allow customization of user sessions

UniVentures

27 Buckthorn Way, Suite One
Menlo Park, CA 94025

Contact:

Ray Krug
Marketing
415/325-3283

CDB by THIRD EYE SOFTWARE

Description:

An interactive symbolic source level debugger.

Host H/W:

N/A

Host S/W:

N/A

Target H/W:

Series 32000-based systems

Target S/W:

4.2 bsd UNIX

Language:

C

Availability Date:

29 February 1984

Key Product Features:

- Procedure calls from the command line
- Assertions
- All variable names are accessible
- Single stepping at the statement level
- RECORD and PLAYBACK
- All expressions use normal C syntax
- Formatted structure dumps

Key Product Benefits:

- Breakpoints can be set up in many ways
- Single stepping allows you to follow procedure call or "step over"
- Can use to find memory management bugs with assertions
- The code you see is your source; no need to know local machine language or how compiler generates code
- Programmers become more productive

UniVentures

27 Buckthorn Way, Suite One
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Contact:

Ray Krug
Marketing
415/325-3283

DBASIC

Description:

An advanced, structured BASIC written in C for UNIX systems.

Host H/W:

N/A

Host S/W:

N/A

Target H/W:

Series 32000-based systems

Target S/W:

UNIX, 4.2 bsd, DNIX, XENIX,
MS/DOS

Language:

C

Interface/Compatible with other National Software?

Yes, when available, it will port to National Semiconductor software.

Availability Date:

29 February 1984

Key Product Features:

- Long variables
- Multi-line IF . . . THEN . . . ELSE
- Multi-line recursive functions
- Open pipe statements
- IEEE standard floating point arithmetic
- Local function variables
- B-TREE ISAM option
- Time and date function
- Multi-dimensional arrays

Key Product Benefits:

- Has unlimited string lengths which make programming easier
- Graphics capabilities
- Contains NO Western Electric code, no Western Electric licensing
- Not just a revised BASIC, but actually devised from scratch

UniVentures

27 Buckthorn Way, Suite One
Menlo Park, CA 94025

Contact:

Ray Krug
Marketing
415/325-3283

DNIX

Description:

A powerful real-time multi-processor, multi-user operating system with complete support of all UNIX kernel features

Host H/W:

N/A

Host S/W:

N/A

Target H/W:

Series 32000-based systems

Target S/W:

N/A

Language:

C

Interface/Compatible with other National Software?

Software which is portable to UNIX and UNIX-like environments, will run under DNIX.

Availability Date:

29 February 1984

Key Product Features:

- Real-time extensions
- Dynamic allocation of file index records
- Able to allocate contiguous files
- Able to lock processes in memory
- TRAP queues
- User configurable block size
- High reliability disk management
- SPAWN system call (FORK/EXEC)

Key Product Benefits:

- User configurable operating environment making it unnecessary to recompile
- Written in C
- NO Western Electric code, no Western Electric licensing
- Currently compatible with UNIX V7 and XENIX
- Easy to implement complex communication software
- Multi-keyed B-TREE ISAM

UniVentures

27 Buckthorn Way, Suite One
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Contact:

Ray Krug
Marketing
415/325-3283

Green Hills Software's C Compiler

Description:

A high quality, fully optimizing C compiler. Implements the complete C language (Kenighan and Ritchie) and includes all Western Electric and Berkeley extensions.

Host H/W:

N/A

Host S/W:

N/A

Target H/W:

Series 32000-based systems, including AVALON and SYS32

Target S/W:

UNIX, GENIX

Language:

Pascal

Availability Date:

29 February 1984

Key Product Features:

- Complete IEEE floating point support
- One pass design with integrated preprocessor for maximum throughput
- Calling sequence compatible with other GHS optimizing compilers and UNIX portable compiler
- Uses the proven UNIX C run time system and is completely compatible with Berkeley C

Key Product Benefits:

- Advanced compiler technology substantially increases performance and efficiency of SW and HW
- Optimizations can decrease the size of a program by 30% and increase speed by up to 4 times compared to the portable C compiler
- Performs many important global optimizations previously available only on minicomputer or mainframe compilers

UniVentures

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Contact:

Ray Krug
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Q-OFFICE

Description:

Office automation software including Q-ONE, and enhanced Wang-like word processing system.

Host H/W:

N/A

Host S/W:

N/A

Target H/W:

Series 32000-based systems, including SYS32

Target S/W:

UNIX/GENIX

Language:

C

Availability Date:

29 February 1984

Key Product Features:

- Wang-like word processing system
- Electronic mail
- Electronic note pad
- "Desk top" calculator
- Electronic calendar
- Menu utility program
- Menu generation program and menu manager for multi-process windows
- An interactive screen builder

Key Product Benefits:

- Foreign language capability
- The word processing system has records processing facility which will handle data files created by any computer
- Is compatible with any terminal or keyboard as well as all printers

UniVentures

27 Buckthorn Way, Suite One
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Contact:

Ray Krug
Marketing
415/325-3283

FORTRAN Compiler

Description:

Green Hills Software's FORTRAN compiler is a fully optimizing compiler for Series 32000.

Host H/W:

N/A

Host S/W:

N/A

Target H/W:

AVALON AP/10, System 32

Target S/W:

UNIX/GENIX

Language:

Pascal

Availability Date:

29 February 1984

Key Product Features:

- Complete ANSI 66 and 77 compatibility
- Complete IEEE floating point
- Works with Series 32000 floating point unit
- Calling sequence compatibility with all Green Hills compilers
- One-pass design for maximum throughput

Key Product Benefits:

- Generates up to 4 times faster code than portable UNIX FORTRAN 77
- Extensive loop optimizations are performed
- Advanced compiler techniques are used to reduce space
- Complete common subexpression elimination for efficient array operations
- Uses proven UNIX FORTRAN runtime system

UniVentures

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Pascal Compiler

Description:

The Green Hills Software Pascal compiler is a fully optimizing compiler

Host H/W:

N/A

Host S/W:

N/A

Target H/W:

AVALON AP/10, System 32

Target S/W:

UNIX/GENIX

Language:

Pascal

Availability Date:

29 February 1984

Key Product Features:

- Complete ANSI Pascal compatibility
- Complete IEEE floating point
- Calling sequence compatibility with all GHS compilers
- One-pass design for maximum throughput
- Generates up to 4 times faster code than portable UNIX pc compiler

Key Product Benefits:

- Generates 30% less code than portable UNIX pc compiler
- Extensive loop optimizations are performed
- Advanced compiler techniques are used to reduce space
- Complete common subexpression elimination for efficient array operations
- Uses proven UNIX Pascal runtime system



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