



VALIDATED PRODUCTS LIST

1995 No. 4

Programming Languages
Database Language SQL
Graphics
POSIX
Computer Security
Product Data - IGES
OSI

L. Arnold Johnson
Peggy N. Himes
Co-Editors

U.S. DEPARTMENT OF COMMERCE
Technology Administration
National Institute of Standards
and Technology
Computer Systems Laboratory
Software Standards Validation Group
Gaithersburg, MD 20899

October 1995

(Supersedes July 1995 issue)

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U.S. DEPARTMENT OF COMMERCE
Ronald H. Brown, Secretary

TECHNOLOGY ADMINISTRATION
Mary L. Good, Under Secretary for Technology

NATIONAL INSTITUTE OF STANDARDS
AND TECHNOLOGY
Arati Prabhakar, Director



FOREWORD

The Validated Products List (VPL) identifies information technology products that have been tested for conformance to Federal Information Processing Standards (FIPS) in accordance with Computer Systems Laboratory (CSL) conformance testing procedures, and have a current validation certificate or registered test report. The VPL also contains information about the organizations, test methods and procedures that support the validation programs for the FIPS identified in this document. The VPL includes computer language processors for programming languages COBOL, Fortran, Ada, Pascal, C, M[UMPS], and database language SQL; computer graphic implementations for GKS, CGM, PHIGS, and Raster Graphics; operating system implementations for POSIX; Open Systems Interconnection implementations; computer security implementations for DES, MAC and Key Management, product data implementations for IGES, and Open System Interconnection (OSI) implementations. The testing of products to assure conformance to the FIPS may be required by Government agencies in accordance with the FIPS, Federal Information Resources management Regulation (FIRMR) Parts 201.13 and 201.39, and the associated Federal ADP and Telecommunications Standards Index. The VPL is updated and published quarterly.

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James Foti, of the Computer Security Division, CSL, for the Computer Security entries.

Michele Buckley, of the Systems and Network Architecture Division, CSL, for Open Systems Interconnection (OSI) entries.

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1. INTRODUCTION

1.1 Purpose

The testing of Information Technology (IT) Products to determine the degree to which they conform to specific Federal Information Processing Standards (FIPS) may be required by Government agencies as specified by the FIPS, Federal Information Resources Management Regulation (FIRMR) Parts 201-20.303, 201-20.304, and 201-39.1002, and the associated Federal ADP and Telecommunications Standards Index. Products having a current validation certificate or test report may be offered or delivered by vendors in response to requirements as set forth in solicitations by Federal agencies. The Validated Products List (VPL) contains conformance testing information for the following IT Standards:

- Programming Languages COBOL, Fortran, Ada, Pascal, C, and M[UMPS]
- Database Language SQL
- Graphics
- POSIX
- Computer Security
- Open Systems Interconnection (OSI)
- Product Data (IGES)

This List is updated and published quarterly. The information contained herein is supplied by the contributors listed in Section 2.6 and Appendix A, and is current as of the tenth of the month preceding the publication date. Copies of the VPL may be obtained from:

National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22151

Subscriptions: (703) 487-4630
Individual Copies: (703) 487-4650

Ordering Number: PB94-937304/AS

The entries in the printed VPL (except those for Open Systems Interconnection (OSI), POSIX and Ada) are contained in WordPerfect Version 5.1 files and may be accessed on the Internet using the following instructions:

Type: **ftp speckle.ncsl.nist.gov** (internet address is 129.6.59.2)
Login as user **ftp**
Type your e-mail address preceded by a dash (-) as the password
Type: **cd vpl**
Type: **binary**
Type: **get** and the name of the file you want; e.g. **language**

These entries are also available as DOS text files, through the World Wide Web using the following instruction:

Open the file called "<http://speckle.ncsl.nist.gov/~kailey/intro.htm>"

Questions or comments concerning the VPL should be directed to:

National Institute of Standards and Technology (NIST)
Computer Systems Laboratory
Software Standards Validation Group
Building 225, Room A266
Gaithersburg, MD 20899
Telephone (301) 975-3274

1.2 Document Organization

1.2.1 Programming Languages

Section 2 identifies those COBOL, Fortran, Pascal, C, Ada, and M[UMPS] programming language processors that have a current validation certificate or registered test report referencing the applicable FIPS as of the date of this publication.

1.2.2 Database Language SQL

Section 3 identifies those SQL language processors that have a validation certificate or a registered test report for FIPS PUB 127-2 as of the date of this publication.

1.2.3 Graphics

Section 4 lists the implementations or files for which a validation certificate is currently in place. These entries include:

Graphical Kernel System (GKS) implementations (FIPS PUB 120-1),
Programmer's Hierarchical Interactive Graphics Systems (PHIGS) (FIPS PUB 153),
Computer Graphics Metafiles (CGMs) (FIPS PUB 128),
Raster Graphics data files (FIPS PUB 150).

1.2.4 POSIX

Section 5 identifies POSIX products that have a current validation certificate for FIPS PUB 151-1 and FIPS PUB 151-2.

1.2.5 Computer Security

Section 6 contains information regarding validated products for FIPS PUB 46-1, Data Encryption Standard (DES), FIPS PUB 113, Computer Data Authentication (Implements Message Authentication Code, ANSI X9.9), and FIPS PUB 171, Key Management Using ANSI X9.17.

1.2.6 Product Data

Section 7 contains information regarding validated products for FIPS PUB 177, Initial Graphics Exchange Specification (IGES).

1.2.7 Open Systems Interconnection (OSI)

Section 8 contains information about the OSI Products Database which was developed for FIPS PUB 146-1. FIPS Pub 146-2, Profile for Open Systems Internetworking Technologies (POSIT), replaces FIPS

146-1. However, this information is retained for the convenience of agencies that wish to acquire OSI Protocols.

1.2.8 FIPS Conformance Testing Products

Appendix A lists FIPS conformance testing products and services available to the public. Information for these products and services may be obtained by contacting the appropriate person listed.

2. PROGRAMMING LANGUAGES

2.1 FIPS Programming Language Standards

As specified by the FIPS, FIRMR and the associated Federal ADP and Telecommunications Standards Index, Federal agencies when acquiring language processors, are responsible for assuring that processors are in accordance with the following FIPS for programming languages:

- a. COBOL processors must satisfy the provisions of FIPS PUB 21-3, COBOL, and must be identified as implementing all of the language elements of at least one of the subsets of FIPS COBOL as specified in FIPS PUB 21-3.
- b. BASIC processors must satisfy the provisions of FIPS PUB 68-2, BASIC.
- c. Fortran processors must satisfy the provision of FIPS PUB 69-1, Fortran, (based on ANSI X3.9-1978) and must be identified as implementing all of the language elements of the subset or full levels of FIPS Fortran as specified in FIPS PUB 69-1.
- d. Pascal processors must satisfy the provisions of FIPS PUB 109, Pascal.
- e. Ada processors must satisfy the provisions of FIPS PUB 119, Ada.
- f. M[UMPS] processors must satisfy the provisions of FIPS PUB 125-1, M[UMPS].
- g. C processors must satisfy the provisions of FIPS PUB 160, C.
- h. VHDL processors must satisfy the provisions of FIPS PUB 172, VHDL.

Copies of the above publications are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Conformance testing programs are currently available for all above FIPS except for the programming language BASIC and VHDL. A test suite for BASIC is being developed.

2.2 Organization of Programming Language Processor Entries

The entries in the VPL for programming language processors are presented as follows:

- The SUPPLIER column contains the name of the provider of the processor that was tested.
- The next column contains the PROCESSOR IDENTIFICATION, the Validation Summary Report (VSR) number, the SUBSET, and the EXPIRY DATE.

The PROCESSOR ID is the product name and version of the processor that was tested.

The VSR number refers to the VSR that was produced as a result of the testing. The VSR describes the testing environment and details any processor nonconformity that was detected as a result of the testing. Information for obtaining a VSR is listed in section 2.6.

The EXPIRY DATE is the expiration date of the Certificate of Validation or Registered Validation Summary Report. A processor may be included in the List after the certificate has expired if the validation is in process. Notification must be received by NIST at least 30 days prior to publication of the List in order for such a processor to be included. In this case the expiration date will be followed by "(pending)".

For COBOL processors, the SUBSET refers to the applicable Federal Subset (Minimum, Intermediate, or High). For Fortran processors, the LEVEL specifies the applicable Federal level (Subset or Full). For Pascal processors, the ISO 7185 Pascal Standard Level (ISO 7185 Level 0 is equivalent to FIPS 109).

- The HARDWARE & OPERATING SYSTEM column presents the hardware and operating system environment (including pertinent supporting system software) used during the validation.
- The entries in the OTHER ENVIRONMENTS column are registered hardware and operating system environments for the processor tested. The vendor of the processor has certified that the identified processor, when operating under the environments included in this column, produces the same test results as those obtained from the hardware and operating system environment used during the validation. Test results and other information from these environments may be required as evidence for entries to be included in this column.

The entries for Ada language processors are not presented in column format.

Also listed are the programming language processors that have been tested and during the testing were found to have one or more nonconformities.

2.3 Validation of Processors

2.3.1 Validation Requirements

In accordance with the requirements referenced in Section 1.1, language processors offered to the Government for purchase, lease, or use in connection with ADP services shall be validated for conformance to FIPS for programming languages. To confirm that the specifications of the designated FIPS have been met:

- a. the processor shall be tested with the Compiler Validation System (CVS) approved by NIST,
- b. the processor validations shall be conducted in accordance with NIST validation procedures,
- c. a Validation Summary Report (VSR) shall be produced summarizing the test results of the CVS on the designated processor for that FIPS,
- d. all nonconformities noted in the VSR shall be corrected within twelve months,
- e. a Certificate of Validation shall be issued if validation results warrant. In order for a processor to receive a Certificate of Validation the processor must successfully pass all applicable tests of the CVS without exception.

The Federal ADP and Telecommunications Standards Index supplies standard terminology which may allow for delayed validation. When delayed validation is allowed, the offeror may meet this requirement by showing evidence of having submitted the processor for validation. Proof of submission is in the form of a letter from NIST scheduling the validation.

Programming language processors offered to the Federal Government must comply with the applicable Government requirements. Failure to comply with these requirements shall be deemed sufficient cause to declare a bidder non-responsive or to declare a vendor in default for failure to deliver required software.

2.3.2 Placement in the List

For a processor to be placed in the List it must:

- a. have been officially tested within the past twelve calendar months, and
- b. have no errors remaining that were identified during a previous test.

2.3.3 Removal from the List

A processor is removed from the List when:

- a. the processor is not officially tested within twelve calendar months, or
- b. testing indicates that the processor still contains errors identified during a previous validation.

2.3.4 Validation Procedures

Validation procedures are published in the following documents:

Compiler Validation Procedures, dated January 15, 1993
Ada Compiler Validation Procedures and Guidelines, Version 3.1, August, 1992
Pascal Validation Policy and Procedures, Version 5.6, September 1, 1994
M[UMPS] Validation Procedures, Version 1.0, dated August 13, 1992

2.4 Certificate of Validation

A Certificate of Validation is issued for those programming language processors that have been tested and are considered to be in compliance with the FIPS as specified by the FIPS, FIRMR and the associated Federal ADP and Telecommunications Index.

The requirement for retesting may be waived and the certificate of validation extended at the option of NIST if:

- a. no errors were identified during the previous testing of the processor,
- b. the vendor certifies, in writing, to NIST that no changes have been made to either the processor or the supporting system software, and
- c. no new version of the validation system has been officially released during the interim period.

2.5 Language Processor Validation Suites

Following are the validation suites and ordering information for testing programming language processors for conformance to FIPS.

- a. Copies of the COBOL, Fortran, M[UMPS], and Ada Compiler Validation Suites may be purchased from:

National Technical Information Service (NTIS)
5285 Port Royal Road
Springfield, VA 22161
Telephone (703) 487-4650 (Voice)
(703) 321-8547 (FAX)

COMPILER VALIDATION SYSTEM [MEDIUM/FORMAT]	VERSION	NTIS ACCESSION NUMBER
COBOL 85 (CCVS85)	4.2	PB93-504918
Fortran (FCVS78)	2.1	PB94-500691
Ada [Tape/Backup]	1.11	ADA212551
Ada [Tape/Tar]	1.11	ADA212437
Ada [Tape ANSI Standard]	1.11	ADA212548
Ada [Disk (MS/DOS)]	1.11	ADA212549
M[UMPS]	8.3	PB94-504099

- b. The current version of the Pascal Validation System (PVS) is Version 5.7 and is available from:

Prospero Software
190 Castelnau
London
SW13 9DH
ENGLAND
Telephone (011) +44-081 741 8531 (Voice)
(011) +44-081 748 9344 (FAX)

- c. The current version of the ANSI C Validation Suite (ACVS[™]) is Version 4.2 and is available from:

Perennial, Inc.
4699 Old Ironsides Drive
Suite 210
Santa Clara, CA 95054
Telephone (408) 748-2900 (Voice)
(408) 748-2909 (FAX)

2.6 Testing Laboratories and Supporting Organizations

The organizations listed below have performed validations, supplied information, or are sources for Validation Summary Reports (VSR) for programming languages. These organizations may be contacted for validation information and for copies of VSR(s). COBOL and Fortran VSR(s) may be obtained from NIST. Pascal VSR(s) whose VSR numbers begin with "NIST" or end in "US" may also be obtained

from NIST. Pascal VSR(s) whose VSR numbers end in "UK" are available from BSI. Ada VSR(s) may be obtained from the Ada Information Clearinghouse, the National Technical Information Service, or from the Ada Validation Facility (AVF) that produced the VSR. To obtain a copy of a VSR from an AVF, locate the upper case letter in the certificate number (e.g., 870608W1. . .). That letter corresponds to the letter in the CODE column to the left of the organizations listed below.

<u>CODE</u>	<u>ORGANIZATION</u>	<u>CONTACTS</u>	<u>LANGUAGE</u>
S	National Institute of Standards and Technology Software Standards Validation Group Building 225, Room A266 Gaithersburg, MD 20899 (301) 975-3274 Telex: 197674 NBS UT FAX: (301) 948-6213	L. Arnold Johnson Judy Kailey Carmelo Montanez William Dashiell	All COBOL, Fortran BASIC Pascal, C Ada, M[UMPS], SQL, VHDL, COBOL, Fortran
N	National Computing Centre Limited (NCC) Oxford House, Oxford Road Manchester M1 7ED United Kingdom (011) +44 (61) 228 6333 +44 (61) 236 9877 (FAX) Telex 668962	Jane Pink Jon Leigh David Bamber	COBOL Fortran Ada C
	German National Research Center for Computer Science (GMD) Department Scientific Visualization Supercomputer Center (HLRZ) P. O. 1316, Schloss Birlinghoven D-W-5205 Sankt Augustin 1 Germany (011) +49-2241-14-2706 (voice) (011) +49-2241-14-2618 (FAX) kirsch @gmdzi.gmd.de	Berthold Kirsch	Fortran
	Instituto Italiano del marchio di Qualita (IMQ) Servicio SCQ Via Quintiliano, 43 20138 Milano Italy +39-2-5073266 +39-2-5073271 (Fax) Telex: 310 393 IMQI	Angelo Belloni	COBOL Fortran
	JMI Institute 21-25, Kinuta 1-Chome Setagaya-Ku, Tokyo 157 Japan +81 3 3416 9600	Y. Fukui	COBOL Fortran

	British Standards Institution Quality Assurance (BSIQA) P.O. Box 375 Milton Keynes MK14 6LL United Kingdom (011) +44 908-22-09-08 (011) +44-908-22-06-71 (Fax) Telex: 827682 BSIQAS G	John Souter	Pascal
W	Ada Validation Facility Language Control Facility ASD/SCEL Wright-Patterson AFB, OH 45433-6503 (513) 255-4472	Dale Lange	Ada
B or A	Association Francais de Normalisation (AFNOR) Direction Certification Tour Europe, Cedex 7 BP-92049 Paris la Dè fense FRANCE (011) 33-142915960 (011) 33-142915656 (Fax) Telex: AFNOR 611 974 F	M. Alphonse Philippe	Ada
I	IABG-AVF Industrieanlagen-Betriebsgesellschaft Dept. ITE Einsteinstrasse 20 D-8012 Ottobrunn Federal Republic of Germany +49-89-6088-2477 e-mail: tonndorf@ajpo.sei.cmu.edu	Michael Tonndorf	Ada
	Ada Information Clearinghouse P. O. Box 1866 Falls Church, VA 22041 (703) 681-2466		Ada VSR(s)
	National Technical Information Service U.S. Department of Commerce 5285 Port Royal Road Springfield, VA 22161 (703) 487-4650		Ada VSR(s)

2.7 LANGUAGE PROCESSORS WITH CERTIFICATES NO NONCONFORMITIES

COBOL -
Certificates

2.7.1 COBOL PROCESSORS

SUPPLIER	PROCESSOR ID; VSR#; SUBSET; EXPIRY DATE	HARDWARE; OPERATING SYSTEM	OTHER ENVIRONMENTS
Computer Associates	CA-Realia COBOL Version 4.2 NIST-95/1806; Intermediate; 7/1/96	IBM PS/2 Model 95; Windows Version 3.1	IBM PS/2 Model 60, 70, 80, 90; Windows Version 3.1
	CA-Realia COBOL Version 4.2 NIST-95/1807; Intermediate; 7/1/96	IBM PS/2 Model 95; Windows NT Version 3.5	IBM PS/2 Model 60, 70, 80, 90; Windows NT Version 3.5
	CA-Visual Realia Version 1.0 NIST-95/1803; Intermediate; 7/1/96	IBM PS/2 Model 95; Windows Version 3.1	IBM PS/2 Model 60, 70, 80, 90; Windows Version 3.1
	CA-Realia Workbench Version 2.1 NIST-95/1802; Intermediate; 7/1/96	IBM PS/2 Model 95; OS/2 WARP Version 3.0	IBM PS/2 Model 60, 70, 80, 90; OS/2 WARP Version 3.0
	CA-Realia Workbench Version 1.1 NIST-95/1801; Intermediate; 7/1/96	IBM PS/2 Model 95; DOS Version 6.2	IBM PS/2 Model 60, 70, 80, 90; DOS Version 6.2
	CA-Realia COBOL Version 4.2 NIST-95/1804; Intermediate; 7/1/96	IBM PS/2 Model 95; DOS Version 6.2	IBM PS/2 Model 60, 70, 80, 90; DOS Version 6.2
	CA-Realia COBOL Version 4.2 NIST-95/1805; Intermediate; 7/1/96	IBM PS/2 Model 95; OS/2 WARP Version 3.0	IBM PS/2 Model 60, 70, 80, 90; OS/2 WARP Version 3.0
Digital Equipment Corporation	VAX COBOL Version 5.2; NIST-94/1401; High; 4/1/96	VAX 4000 Model 60; OpenVMS VAX, Version 5.5	VAX 4000 models 200, 300; VAX 6000 models 200, 300, 400, 500; VAX's 8200, 8250, 8300, 8350, 85xx, 8600, 8650, 8700, 8800, 8810, 8820, 8830, 8840; VAX 9000 models 210, 400; VAXft 3000 model 310, VAX 11/730, VAX 11/750, VAX 11/785; MicroVAX II, 2000, 3100, 3200, 3500, 3520, 3540; VAXstation II, 2000, 3100, 3200, 3500, 3520, 3540; VAXserver 3600, 3602, 3800, 3900, 4000 models 200, 300; 6000, 210/220, 6000 310/320; 6000 410/420; 6000 510/520; OpenVMS VAX Version 5.5

COBOL PROCESSORS, *Continued*

COBOL -
Certificates

SUPPLIER	PROCESSOR ID; VSR#; SUBSET; EXPIRY DATE	HARDWARE; OPERATING SYSTEM	OTHER ENVIRONMENTS
	DEC COBOL for OpenVMS Alpha Version 2.2; NIST-95/1501; High; 5/1/96	DEC 3000 Model 500; OpenVMS Alpha Version 6.1	Digital AXPvme 64, DEC 2000, models 300S & 500, Digital 2100 A500/600MP, VMEAlpha64/SP, DEC 3000 models 300, 300L, 300LX, 300X, 400, 400S, 500, 500S, 500X, 600, 600S, 800, 800S, DEC 4000 models 600 and 700 AXP Series, DEC 7000 model 600 AXP Series, DEC 10000 model 600 AXP Series OpenVMS Alpha Version 6.1
	DEC COBOL for Digital UNIX Version 2.2 NIST-95/2021; High; 10/1/96	DEC 3000 AXP Model 500 Digital UNIX Version 3.0	DEC 2000 Models 300 AXP, 500; DEC 3000 Models 300, 300L, 300X, 300XL, 400, 400S, 500, 500S, 500X, 600, 600S, 800, 800S, 900; DEC 4000 Models 610, 710; DEC 7000 Model 610; DEC 10000 Model 610 Digital UNIX Version 3.0
	Microfocus COBOL for Digital UNIX Version 3.2 NIST-95/2022; High; 10/1/96	DEC 3000 AXP Model 500 Digital UNIX Version 3.0	DEC 2000 Models 300 AXP, 500; DEC 2100 Server A500MP, A600MP; DEC 3000 Models 300, 300L, 300X, 300XL, 400, 400S, 500, 500S, 500X, 600, 600S, 800, 800S; DEC 4000 Models 610, 710; DEC 7000 Model 610; DEC 10000 Model 610 Digital UNIX Version 3.0
Hewlett-Packard Company	COBOL/HP-UX Version B.09.00; NIST-95/1601; High; 5/1/96	HP9000 Series 755; HP-UX Version 10	HP 9000 Ser 815, 822, 825, 832, 807, 817, 827, 837, 847, 857, 867, 877, 635, 645, 870/200, 870/300, 720, 730, 750, 870/400, 834, 835, 842, 852, 845, 850, 855, 870, 860, 865, 887, 897, 890/1, 890/2, 890/3, 890/4, 705, 710, 735, 755, EXX, FXX, GXX, HXX, IXX, T500, 890, 712, 715, 725 HP-UX Version 10
	COBOLII/iX Version A.04.11; NIST-94/1632; High; 5/1/96	HP3000 Series 967; MPE/iX Version B.30.45	HP3000 Series 917, 920, 922, 925, 927, 932, 935, 937, 947, 948, 949, 950, 955, 957, 958, 960, 967, 977, 980/100/200/300/400.987,987/200RX/SX,987/200Plus, 990, 991/CX/DX, 992, 992/100/200/300/400, 995/CX/DX/100/200/300/400/500/600/700/800, 918LX/RX, 28LX/RX, 968LX/RX, 978LX/RX; MPE/iX Version B.30.45
	COBOL/HP-UX SJIS Version A.09.20; NIST-95/1602; High; 5/1/96	HP9000 Series 755; HP-UX Version 10	HP 9000 Ser 815, 822, 825, 832, 807, 817, 827, 837, 847, 857, 867, 877, 635, 645, 870/200, 870/300, 720, 730, 750, 870/400, 834, 835, 842, 852, 845, 850, 855, 870, 860, 865, 887, 897, 890/1, 890/2, 890/3, 890/4, 705, 710, 735, 755, EXX, FXX, GXX, HXX, IXX, T500, 890, 712, 715, 725 HP-UX Version 10
	COBOL/HP-UX EUC Version A.09.19; NIST-95/1603; High; 5/1/96	HP9000 Series 755; HP-UX Version 10	HP 9000 Ser 815, 822, 825, 832, 807, 817, 827, 837, 847, 857, 867, 877, 635, 645, 870/200, 870/300, 720, 730, 750, 870/400, 834, 835, 842, 852, 845, 850, 855, 870, 860, 865, 887, 897, 890/1, 890/2, 890/3, 890/4, 705, 710, 735, 755, EXX, FXX, GXX, HXX, IXX, T500, 890, 712, 715, 725 HP-UX Version 10
	HP Micro Focus COBOL/iX Version B.08.00; NIST-95/1604; High; 5/1/96	HP 3000 Series 867; MPE/iX Version X.50.40	HP3000 Series 917, 920, 922, 925, 927, 932, 935, 937, 947, 948, 949, 950, 955, 957, 958, 960, 967, 977, 980/100/200/300/400.987,987/200RX/SX,987/200Plus, 992/100/200/300/400, 991/CX/DX, 995/CX/DX/ 100/200/300/400/500/600/700/800, 918LX/RX, 928LX/RX, 968LX/RX, 978LX/RX; MPE/iX Version X.50.40

COBOL PROCESSORS, *Continued*

COBOL -
Certificates

SUPPLIER	PROCESSOR ID; VSR#; SUBSET; EXPIRY DATE	HARDWARE; OPERATING SYSTEM	OTHER ENVIRONMENTS
Hitchi, Ltd.	Micro Focus COBOL V3.2 for UNIX (Hitachi 370 running OSF/1); NIST-95/1926; High; 8/1/96	Hitachi Data Systems GX/6215; HI-OSF/1-M Version R1.2	
IBM Canada, Ltd.	COBOL/400 Version 3 Release 1; NIST-94/2121; Intermediate; 11/1/95	AS/400; OS/400 Version 3 Release 1	
IBM Corporation	IBM SAA AD/CYCLE COBOL/370 Version 1 Release 1; NIST-94/1923; High; 6/1/96	IBM 3090; MVS/ESA Version 5 Release 1 VM/ESA Version 1 Release 2.2	IBM 390, 3000, 4381-T92, 9000; MVS/ESA Version 4 Release 3 VM/ESA Version ESA Release 1.0
	VS COBOL II Version 1 Release 4; NIST-94/1921; Intermediate; 6/1/96	IBM 3090; VM/ESA Version 1 Release 2.2 MVS/ESA Version 5 Release 1 VSE/ESA Version 1 Release 3	IBM 370, 390, 3000, 4300, 9000; VM/SP6 MVS/XA Version 2 Release 2.3 MVS/370 Version 1 Release 3.6 VSE/ESA Version 1 Release 3
Micro Focus	Micro Focus COBOL V3.2 for DOS, Windows and OS/2; NIST-95/1927; High; 8/1/96	IBM PS/2 Model 9585; IBM OS/2 WARP Version 3.0 Toshiba T4800CT Microsoft DOS Version 6.2	
	Micro Focus Object COBOL V4.0 for 32-bit OS/2; NIST-95/1929; High; 8/1/96	IBM Value Point 100D X 4; IBM OS/2 WARP Version 3.0	
	Micro Focus Object COBOL V4.0 for Windows NT; NIST-95/1920; High; 8/1/96	IBM PS/2 Model 90 Microsoft Windows NT Version 3.5	
	Micro Focus COBOL V4.0 for UNIX (IBM RS/6000 running AIX); NIST-95/1921; High; 8/1/96	IBM RS/6000 C10 AIX Version 4.1.1 IBM RS/6000 PowerPC AIX Version 3.2.5	
	Micro Focus COBOL V4.0 for UNIX (Intel 80386 running SCO UNIX); NIST-95/1922; High; 8/1/96	UNIQ 486 EISA SCO UNIX 3.2v4.2	

COBOL PROCESSORS, *Continued*

COBOL -
Certificates

SUPPLIER	PROCESSOR ID; VSR#; SUBSET; EXPIRY DATE	HARDWARE; OPERATING SYSTEM	OTHER ENVIRONMENTS
	Micro Focus COBOL V3.2 for UNIX (Sun SPARC running Solaris 2); NIST-95/1923; High; 8/1/96	Sun SPARCserver 20 Solaris Version 2.4 Sun SPARC 4/330 Solaris Version 2.3	
	Micro Focus COBOL V3.2 for UNIX (HP 9000 Series 600, 700, and 800); NIST-95/1924; High; 8/1/96	HP 9000 Series 835; HP-UX Version 9.0	
Sequent Computer Systems, Inc.	Micro Focus COBOL V3.2 for UNIX (Sequent Symmetry); NIST-95/1928; High; 8/1/96	Sequent Symmetry Pentium™ 60 DYNIX/ptx Version 4.0	
Siemens Nixdorf Informations- systems AG	COBOL85 Version 2.1B NIST/NCC-94/987; High 8/23/96	7.500; BS2000/OSD Version 1.0	
Silicon Graphics, Inc.	Micro Focus COBOL V3.2 for UNIX (SGI Indigo and Challenge); NIST-95/1925; High; 8/1/96	SGI Iris Indigo; IRIX Version 5.2	
Tandem Computers, Inc.	COBOL85 Version D30; NIST-95/1781; High; 7/1/96	Himalaya K10000; Guardian Version D30	CLX800, CYCLONE, CLX/R1100, CLX/R1200, CLX2000, CYCLONE R, Himalaya K110, K120, K1000, K10000 Guardian Version D30 Himalaya K2000, K20000 Guardian Version D30.01
UNISYS	UCS COBOL (UCOB) Version 6R3 Release SB5R3; NIST-95/1041; High; 1/1/96	Unisys 2200 Model 900; 2200 OS EXEC Version 44R3 Release SB5R3	Unisys 2200 Model 500; 2200 OS EXEC Version 44R3 Release SB5R3

2.7.2 FORTRAN PROCESSORS

Fortran -
Certificates

SUPPLIER	PROCESSOR ID; VSR#; SUBSET; EXPIRY DATE	HARDWARE; OPERATING SYSTEM	OTHER ENVIRONMENTS
Concurrent Computer Corporation	Fortran VII O Version R06 Release 01; NIST-94/1721; Full; 9/1/96	3280MPS; OS/32 Version R09 Release 02	32xx, Model 3200, Micro 3200, 3280E; OS/32 Version R09 Release 02
	Fortran VII Z Version R06 Release 01; NIST-94/1722; Full; 9/1/96	3280MPS; OS/32 Version R09 Release 02	32xx, Model 3200, Micro 3200, 3280E; OS/32 Version R09 Release 02
	SP-2450 (Fortran 77) Version 2.1; NIST-94/1723; Full; 9/1/96	7000 Model 7200; RTU Version 6.1	Model 71xx, 72xx, 74xx, 75xx; RTU Version 6.1
	SP-2450 (Fortran 77) Version 2.3; NIST-94/1724; Full; 9/1/96	MAXION Multiprocessor System Model 9502; RTU Version 6.2	MAXION Multiprocessor System Model 9100, 9200 RTU Version 6.2
Convex Computer Corporation	Convex Fortran Version 9.1; NIST-95/1701; Full; 6/1/96	Convex C Series Model C4640; ConvexOS Version 11.1	Convex C46X0, C38X0, C34X0, C32X0; ConvexOS Versions 10.2, 11.0
	Convex Fortran Version 9.2; NIST-95/1702; Full; 6/1/96	Convex Exemplar Model SPP12000/XA; SPP-UX Version 3.03	Convex SPP1000/XA, SPP1000/CD SPP-UX, Versions 3.02, 3.04
Cray Research, Inc.	CF90 Compiler Release 1.0; NIST-95/1761; Full; 6/1/96	Cray T3D; UNICOS Release 8.0.3	
	CF90 Compiler Release 1.0.2; NIST-95/1762; Full; 6/1/96	Cray T90; UNICOS Release 8.3	Cray C90; UNICOS Release 8.0
	CF90 Compiler Release 1.0.2; NIST-95/1763; Full; 6/1/96	Cray C90; UNICOS Release 8.0.3	Cray T90; UNICOS Release 8.3

NOTE: Though some of the Suppliers may name the compilers Fortran 90, no testing has been done and no certificates have been issued for Fortran 90. All testing and the certificates are for FIPS 69-1, Fortran (77) only.

FORTRAN PROCESSORS, *Continued*

Fortran -
Certificates

SUPPLIER	PROCESSOR ID; VSR#; SUBSET; EXPIRY DATE	HARDWARE; OPERATING SYSTEM	OTHER ENVIRONMENTS
	CF90 Compiler Release 1.0.2; NIST-95/1764; Full; 6/1/96	Cray J90; UNICOS Release 8.0.3	Cray Y-MP; UNICOS Release 8.0.3 Cray T90; UNICOS Release 8.3
	CF90 Compiler Release 1.0.2; NIST-95/1765; Full; 6/1/96	Cray CS-6400; SUNOS Release 5.3	SPARC; SUNOS Release 5.3
Digital Equipment Corporation	DEC Fortran for OpenVMS VAX, Version 6.2; NIST-95/1003; Full; 12/1/95	VAXstation 4000/60; OpenVMS VAX Version 6.1	VAX 4000 Models 100, 100A, 105A, 200, 300, 400, 500, 500A, 600, 600A, 700A; VAX 6000 Models 200 300 400 600; VAX 8200; 8250, 8300, 8350, 8500, 8530, 8550, 8600, 8650, 8700, 8800, 8810, 8820, 8830, 8840, 8842; VAX 9000 Models 110, 110VP[5], 210VP, 300 400 420 430 440 440VP; VAX 10000 Model 600; VAXft Models 110 310, 410, 610, 612; VAX-11/730, 11/750, 11/780, 11/785; MicroVAX II, 2000; MicroVAX 3100 Models 10/10E, 20/20E, 30, 40, 80, 90; MicroVAX 3300, 3400, 3500, 3600, 3800, 3900; VAXstation II, 2000; VAXstation 3100 Models 30, 38, 40, 48, 76; VAXstation 3200, 3500, 3520, 3540; VAXstation 4000 Models 60, 90, VLC; VAXserver 3100 Models 10/10E, 20/20E; VAXserver 3300, 3400, 3500, 3600, 3602, 3800, 3900; VAXserver 4000 Models 200, 300, 500, 600; VAXserver 6000 Models 210, 220, 310, 320, 410, 420, 510, 520, 610, 620, 630; VAXserver 8200, 8250, 8300, 8350, 8600, 8650; VAXserver 9000 Models 110, 310, 320, 330, 340; DEC 2000 Models 300S, 500; Digital 2100 A500/600MP, AXPvme 64; DEC 3000 Models 300, 300L, 300LX, 300X, 400, 500X, 600, 600S, 700, 800, 800S, 900; DEC 4000 Models 600 Alpha Series, 700 Alpha Series; DEC 7000 Model 600 Alpha Series; DEC 10000 Model 600 Alpha Series; OpenVMS VAX Version 6.1
	DEC Fortran for OpenVMS AXP, Version 6.2; NIST-95/1004; Full; 12/1/95	DEC 3000 model 400; OpenVMS VAX Version 6.1	DEC 2000 300, 500; 3000 300, 300L, 300LX, 400, 400S, 500, 500S, 500X, 600S, 800, 800S; 4000 600 AXP, 700 AXP; 2100 A500MP, A600MP; 7000 600 AXP; 10000 600 AXP; OpenVMS AXP Version 6.1
	DEC Fortran 90 for OpenVMS AXP, Version 2.0; NIST-95/1001; Full; 12/1/95	DEC 3000/400 AXP; OpenVMS AXP Version 6.1	DEC 2000 Models 300, 500; Digital 2100 A500MP /600MP; DEC 3000 Models 300, 300L, 300LX, 300X, 400, 400S, 500, 500S, 600, 600S, 700, 700S, 800, 800S, 900; DEC 4000 Model 700; DEC 7000 Model 600; DEC 7000 Model 700; DEC 10000 Models 600, 700; Digital AXPvme64; Alpha Server 2000 4/200; Alpha Server 2100 4/200; Alpha Server 4/275; Alpha Server 1000 4/200; Alpha Station 200 4/166, 4/233; Alpha Station 400 4/233 OpenVMS AXP Version 6.1

FORTRAN PROCESSORS, *Continued*

Fortran -
Certificates

SUPPLIER	PROCESSOR ID; VSR#; SUBSET; EXPIRY DATE	HARDWARE; OPERATING SYSTEM	OTHER ENVIRONMENTS
	DEC Fortran for RISC/ULTRIX Version 3.2; NIST-95/1002; Full; 12/1/95	DECstation 5000/240; RISC/ULTRIX Version 4.4	DECstation 2100, 3100, 3100s; Personal DECstation 5000 20/25/50, MX/HX/TX/PXG+/PXG Turbo+; DECstation 5000 120/125/133/200, CX/PX/PXG/ PXG Turbo, 120/125/133/200/240/260, MX/HX/TX/ PXG+/PXG Turbo+; DECsystem 3100; 5000 25/200/240; 5100; 5400; 5500; 5810; 5820; 5830; 5840; 5900; RISC/ULTRIX Version 4.4
	DEC Fortran for DEC OSF/1 Alpha Version 3.7; NIST-95/1502; Full; 5/1/96	DEC 4000 Model 610; DEC OSF/1 Version 3.2	DEC 2000 Models 300, 500; Digital 2100 A500MP/ 600MP; DEC3000 Models 300, 300L, 300LX, 300X, 400, 400S, 500, 500S, 600, 600S, 700, 700S, 800, 800S, 900; DEC 4000 Model 700; DEC 7000 Models 600, 700; DEC 10000 Models 600, 700; Alpha Server 2000 4/200; 2100 4/200; 4/275; 1000 4/200; Alpha Station 200 4/166, 4/233; 400 4/233 DEC OSF/1 Alpha Version 3.2
	DEC Fortran Version 1.1A for Windows NT Alpha Systems; NIST-95/2023; Full; 10/1/96	DECpc 2000 AXP; Windows NT Alpha Systems Version 3.51;	AlphaServer Models 400 4/166, 1000 4/200, 2000 4/200, 2100 4/200; AlphaStation Models 200 4/100, 200 4/166, 200 4/233, 250 4/266, 400 4/233; DECpc Models 2000-300 AXP Server, 2000-500 AXP Server, AXP 150 Universal Platform, XL AXP 233, XL AXP 233 Upgrade; Multia MultiClient Desktop [18]; 2100 Server Model A500MP Windows NT Alpha Systems Version 3.51
	DEC Fortran 90 Version 1.0 for Windows NT Alpha Systems; NIST-95/2024; Full; 10/1/96	DECpc 2000 AXP: Windows NT Alpha Systems Version 3.51;	AlphaServer Models 400 4/166, 1000 4/200, 2000 4/200, 2100 4/200; AlphaStation Models 200 4/100, 200 4/166, 200 4/233, 250 4/266, 400 4/233; DECpc Models 2000-300 AXP Server, 2000-500 AXP Server, AXP 150 Universal Platform, XL AXP 233, XL AXP 233 Upgrade; Multia MultiClient Desktop [18]; 2100 Server Model A500MP Windows NT Alpha Systems Version 3.51
	DEC Fortran 90 for Digital UNIX Alpha Systems Version 2.0; NIST-95/2025; Full; 10/1/96	DEC 4000, 400 AXP; Digital UNIX Version 3.2	DEC 2000 AXP Systems, DEC3000 AXP Systems, DEC 4000 AXP Systems, DEC 7000 AXP Systems, DEC 10000 AXP Systems Digital UNIX Version 3.2
Hewlett- Packard Company	HP 9000 S700 Fortran 77 Version A.10.00 Rel 10.0; NIST-95/1121; Full; 1/1/96	HP9000 Model 720; HP-UX Version 10.0	HP9000, mod 705, 710, 712, 715, 720, 725, 730, 735, 742i, 743i, 745i, 747i, 748i, 750, 755; HP-UX Version 10.0
	HP 9000 S800 Fortran 77 Version A.10.00 Rel 10.0; NIST-95/1123; Full; 1/1/96	HP9000 Model 835; HP-UX Version 10.0	HP9000, mod 807S, 817S, 822S, 825S, 825CHX, 825SRX, 827S, 832S, 835S, 835SE, 837S, 840S, 842S, 845S, 845SE, 847S, 850S, 852S, 855S, 857S, 860S, 865S, 867S, 870S, 877S, 890, 897S, E25, E35, E45, F10, F20, F30, G30, G40, G50, H20, H30, H40, H50, I30, I40, I50, T500; HP-UX Version 10.0

FORTRAN PROCESSORS, *Continued*

Fortran -
Certificates

SUPPLIER	PROCESSOR ID; VSR#; SUBSET; EXPIRY DATE	HARDWARE; OPERATING SYSTEM	OTHER ENVIRONMENTS
	HP 3000 S900 Fortran 77iX Version A.05.00 Rel 5.0; NIST-95/1122; Full; 1/1/96	HP3000 Model 947; MPE/iX Version C.50.00	HP3000, mod 9xx MPE/iX Version C.50.00
IBM Corporation	VS Fortran Version 2 Release 6; NIST-94/1922; Full; 6/1/96	IBM S/390 ES9000 9021 Model 720 MVS/ESA SP Version 4 Release 3	S/390, ES/9000, S/370, 30XX, 43XX, 93XX MVS/SP Version 1, Release 3 MVS/SP Version 2, Release 2 MVS/SP Version 3, Release 1
	IBM AIX XL Fortran Compiler/6000 Version 3 Release 2 NIST-94/2122; Full; 11/1/96	IBM RISC System/6000 POWERserver/POWERstation Model 7013/560 IBM AIX for IBM RISC System/6000 Version 3 Release 2 & Version 4 Release 1	
Intergraph Corporation	Clipper Advanced Optimizing Fortran, Version 1.57; NIST-95/1161; Full; 1/1/96	Clipper Model C400- 2430; CLIX, Version 7.5	Clipper C300 and C400; CLIX, Version 7.5
	Clipper Advanced Optimizing Fortran, Version 2.01; NIST-95/1162; Full; 1/1/96	Clipper Model C400- 2430; CLIX, Version 7.5	Clipper C300 and C400; CLIX, Version 7.5
Microsoft Corporation	Fortran PowerStation Version 4.0; NIST-95/2121; Full; 10/1/96	Compaq Deskpro XE 560 Windows NT Version 3.51 Dell OmniPlex 560 Windows 95	
Modular Computer Systems, Inc.	GLS Fortran 77 Version B.0; NIST-95/1071; Full; 2/1/96	Classic Model 9250; MAX 32 Version E.0	Classic 9230, 9260; MAX 32 Version E.0
Sequent Computer Systems, Inc.	EPC Fortran for Sequent Symmetry Version 2.7; NIST-95/1241; Full; 2/1/96	SE20; DYNIX/ptx Version 4.0	S2000/290, /490, /790 SE60, SE90, ELS, SE30, SE70, SE100; DYNIX/ptx Version 4.0
Silicon Graphics Computer Systems Inc.	Fortran 77 Version SC4-FTN-3.19; NIST-94/1441; Full; 10/1/95	40/CRIM Model IP17; IRIX Version 5.3	
	MIPS PRO Fortran 77 Version SC4-FTN-6.0; NIST-94/1442; Full; 10/1/95	Challenge Model IP21; IRIX Version 6.0	

FORTRAN PROCESSORS, *Continued*

Fortran -
Certificates

SUPPLIER	PROCESSOR ID; VSR#; SUBSET; EXPIRY DATE	HARDWARE; OPERATING SYSTEM	OTHER ENVIRONMENTS
Tandem Computers, Inc.	Fortran Version D30; NIST-95/1782; Full; 7/1/96	Himalaya K1000; Guardian Version D30	CLX800, Cyclone, CLS/R1200, CLX2000, Cyclone R HIMALAYA K110, K120, K1000, K10000 Guardian Version D30
UNISYS	UCS Fortran (UFTN) Version 5R3 Release SB5R3; NIST-95/1042; Full; 1/1/96	Unisys 2200 Model 900; 2200 OS EXEC Version 44R3 Release SB5R3	Unisys 2200 Model 500; 2200 OS EXEC Version 44R3 Release SB5R3

2.7.3 ADA PROCESSORS

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST) NOTICE:

In approximately three (3) months, the National Institute of Standards and Technology (NIST) is considering the deletion of those Ada validation registrations including both Witness Tested Registrations and vendor asserted registrations which do not satisfy the NIST validation registration requirements as specified in FIPS PUB 119-1.

The list of Ada compilers that have been validated by the Ada Joint Program Office (AJPO) is available in electronic form on the AdaIC Bulletin Board as file VALPROC.HLP. Access to the menu-driven bulletin board requires a computer terminal or personal computer and modem. Users should set their telecommunications package with the following parameters: Baud rate= 300 - 9600 baud; Data Bits= 8; Parity= none; Stop Bits= 1. Then dial 703/614-0215 (Commercial) or 224-0215 (Autovon). First-time users will be prompted to register for an account.

Most files have been compressed using PKZIP and must be uncompressed after downloading. PKZIP is available on the bulletin board and can be obtained by downloading the file PKZ101.EXE. Macintosh Plus users can download the file UNZIP101.SIT.

Copies may also be obtained by purchase from the Defense Technical Information Center (DTIC) and the National Technical Information Service (NTIS) with accession number AD A257 705. NTIS sells documents to the public. DTIC distributes documents only to Military, government, or defense contractors who are registered with them.

National Technical Information Service (NTIS)
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161
703/487-4650

Defense Technical Information Center (DTIC)
Cameron Station
Alexandria, VA 22314
703/274-7633
AV 284-7633

The NIST Ada Validation Summary Reports are available electronically in ASCII format and may be accessed on the Internet using the following instructions:

Type: **ftp speckle.ncsl.nist.gov** (Internet address is 129.6.59.2)
Login as user: **ftp**
Type your email address preceded by a dash (-) as the password
Type: **cd ada-testing/VSRs**
Type: **ascii**
Type: **get** and the name of the file you want

Always obtain the latest README.TXT file.

The following database report is an comprehensive list of Ada compilers validated by the AJPO. There are 380 base compilers and 483 derived compilers reported at this time. For the most current information on validated Ada compilers, please contact the AdaIC. Point of contact information for each company precedes its list of validated compilers.

Key to Validation Certificate Number: for Certificate# YYMMDDFX.XXNNN

- YYMMDD marks the date of completion of on-site testing.
- F refers to the Ada Validation Facility
- X.XX is the ACVC version.
- NNN is a unique sequence of numbers assigned by the Ada Validation Organization.

2.7.4 PASCAL PROCESSORS

Pascal -
Certificates

SUPPLIER	PROCESSOR ID; VSR#; SUBSET; EXPIRY DATE	HARDWARE; OPERATING SYSTEM	OTHER ENVIRONMENTS
Digital Equipment Corporation	DEC Pascal Version 5.4 for OpenVMS Alpha Systems; NIST-94/2026; Level 0/1; 10/1/96	DEC 3000 Model 500; OpenVMS Alpha Version 6.2	Digital AlphaServer Products Models 1000, 2000, 2100; Digital AlphaStation Products Models 200, 400; DEC 3000 Models 300, 300L, 300LX, 300X, 400, 400S, 500, 500S, 500X, 600, 600S, 700, 800, 800S, 900; DEC 4000 Models 600, 700, 710; DEC 7000 Models 600, 700; DEC 10000 Model 600 OpenVMS Alpha Version 6.2
	DEC Pascal Version 5.4 for OpenVMS VAX Systems NIST-95/2027; Level 0/1; 10/1/96	VAX 6000-540; OpenVMS VAX Version 6.2	VAXft Models 110, 310, 410, 610, 612; 4000 Models 50, 100, 100A, 200, 300, 400, 500, 500A, 600, 600A, 700, 700A; VAX 6000 Models 200, 210, 220, 230, 240, 300, 310, 320, 330, 340, 360, 400, 410, 420, 430, 440, 450, 460, 500, 510, 520, 530, 540, 550, 560, 600, 620, 630, 630, 640; VAX 7000 Models 600, 610, 620, 630, 640, 650, 660; VAX 8200, 8250, 8300, 8350, 8500, 8530, 8550, 8600, 8650, 8700, 8800, 8810, 8820, 8830, 8840; VAX 9000 Models 110, 210, 330, 340, 410, 420, 430, 440; VAX 10000 Models 610, 620, 630, 640, 650, 660; VAX- 11/730, 11/750, 11/780, 11/785; MicroVAX II, 2000, 3100 Models 10/10E, 20/20E, 30, 40, 80, 90, 3300, 3400, 3500, 3600, 3800, 3900; VAXstation II, 2000, 3100 Models 30, 38, 40, 48, 76, 3200, 3500, 3520, 3540; VAXstation 4000 Models 60, 90, VLC; VAXserver 3100 Models 10, 10E, 20, 20E; 3200; 4000 Models 200, 300, 500, 600; VAXserver 6000 Models 210, 220, 310, 320, 410, 420, 510, 520, 610, 620, 630; VAXserver 8200, 8250, 8300, 8350, 8530, 8550, 8600, 8650, 8700, 8800, 8810, 8820, 8830, 8840 OpenVMS VAX, Version 6.2
	DEC Pascal Version 5.4 for Digital UNIX Systems; NIST-95/2028; Level 0/1; 10/1/96	DEC 3000 Model 400; Digital UNIX Version 3.0	DEC 2000 Model 300S Alpha; DEC 3000 Models 300 Alpha, 300L Alpha, 400 Alpha, 400S Alpha, 500 Alpha, 500S Alpha, 500X Alpha, 600 Alpha, 600S Alpha, 800 Alpha, 800S Alpha; DEC 4000 Models 600 Alpha Series, 710 Alpha; DEC 7000 Model 600 Alpha Series; DEC 10000 Model 600 Alpha Series Digital UNIX Version 3.0
Intergraph Corporation	Clipper Pascal Version 1.8.4B; NIST-95/1165; Level 0/1; 1/1/96	Clipper Model C400- 2430; CLIX Version 7.5	Clipper C300 and C400; CLIX Version 7.5
Metrowerks, Inc.	Metrowerks Pascal "Bronze" Version 1.0 Release b; NIST-94/1682; Level 0; 10/1/95	Apple Quadra 630; Macintosh OS Version 7 Release 1.2P	Apple Power Book 520, 540; Macintosh OS Version 7.1.1 Apple Quadra 650; Macintosh OS Version 7.1.2
Tisoft, Inc.	Green Hills Pascal Compiler Version 1.8.7; NIST-94/2202; Level 0/1; 12/1/95	Compaq ProLiant 2000 Model 5/66; SCO UNIX Releases 3.2 Version 4.2	Compaq ProLiant 1000 486DX2/66, 5/90 SCO Unix Release 3.2 Version 4.2 Compaq ProLiant 2000 Model 5/90 (Dual) Compaq ProLiant 4000 Model 5/90 (QUAD) SCO Unix Release 3.2 Version 4.2 w/SCO MPX Multi-processor Extension Release 3.0

PASCAL PROCESSORS, *Continued*

SUPPLIER	PROCESSOR ID; VSR#; SUBSET; EXPIRY DATE	HARDWARE; OPERATING SYSTEM	OTHER ENVIRONMENTS
UNISYS Government Systems	Stony Brook Pascal for Windows NT Version 1.0; NIST-94/2161; Level 0; 11/1/95	Intel Express Server Model XLX8TEFTS for Intel 80486DX266; Microsoft Windows NT Server Version 3.5	Intel Classic R+ Workstation; Microsoft Windows NT Workstation Version 3.5
	Stony Brook Pascal for Windows NT Version 1.0; NIST-94/2162; Level 0; 11/1/95	Intel Express Server Model XLX8TEFTS for Intel Pentium 60 MHz; Microsoft Windows NT Server Version 3.5	Intel Classic R+ Workstation; Microsoft Windows NT Workstation Version 3.5

2.7.5 C PROCESSORS

C -
Certificates

SUPPLIER	PROCESSOR ID; VSR#; SUBSET; EXPIRY DATE	HARDWARE; OPERATING SYSTEM	OTHER ENVIRONMENTS
Apple Computer Inc.	CodeWarrior "C" Bronze Version 1.1.1; NIST-94/1681; 10/1/95	Apple Quadra Model 630; Macintosh Operating System Version 7.1.2P	Apple PowerBook 520, 540; Macintosh OS Version 7.1.1 Apple Quadra 650; Macintosh OS Version 7.1.2
AT&T Global Information Systems	NCR C Development Toolkit Release 2; NIST-95/1303; 8/1/96	AT&T System 3000 Model 3445; NCR UNIX SVR4 MP-RAS Release 2	AT&T System 3000 Models 3340, 3345, 3350, 3355, 3406, 3410, 3416, 3416-XL, 3430, 3447, 3450, 3455, 3455-XP, 3470, 3475, 3475-XP, 3520, 3525, 3525-XP, 3550, 3555, 3555-XP, 3570, 3575, 3575-XP, 3600; NCR UNIX SVR4 MP-RAS Rel. 2
	Microsoft C/C++ Optimizing Compiler Version 8.0; NIST-95/1301; 8/1/96	AT&T Globalyst Model 530; MS-DOS Version 6.22, MS Windows for Workgroups (WFW) Version 3.11	AT&T System 3000 Models 3150, 3170, 3180, 3181, 3230, 3325, 3333, 3350 MS-DOS Version 6.22, MS WFW Version 3.11 AT&T Globalyst Models 130, 200, 200s, 250, 250p, 510, 515, 520, 525, 530, 550, 575, 580, 590, 600, 620, 630, 720, 730 MS-DOS Version 6.22, MS WFW Version 3.11
	Microsoft C/C++ Optimizing Compiler Version 8.0; NIST-95/1302; 8/1/96	AT&T Globalyst Model 530; MS-DOS Version 6.22, MS Windows Version 3.1	AT&T System 3000 Models 3150, 3170, 3180, 3181, 3230, 3325, 3333, 3350 MS-DOS Version 6.22, MS WFW Version 3.11 AT&T Globalyst Models 130, 200, 200s, 250, 250p, 510, 515, 520, 525, 530, 550, 575, 580, 590, 600, 620, 630, 720, 730 MS-DOS Version 6.22, MS WFW Version 3.11
Digital Equipment Corporation	DEC C for OpenVMS VAX Version 5.2; NIST-95/2029; 10/1/96	VAX 4000 Model 900 OpenVMS VAX Version 7.0	VAX 4000 Models 200, 300; VAX 6000 Models 200, 400, 500; VAX 8200 Models 8250, 85XX, 8600, 8650, 8700, 8800, 8810, 8820, 8830, 8840; VAX 9000 Models 210, 400; VAXft 3000 Models 310, VAX11/730, /735, /780, /785, MicroVAX II, 2000, 3100, 3200, 3300, 3400, 3500, 3520; VAXserver 3100, 3300, 3400, 3500, 3600, 3602, 3800, 3900; 4000 Models 200, 300, 210/220, 310/320, 410/420, 510/520; DEC 10000 Model 600 OpenVMS VAX, Version 7.0
	DEC C for OpenVMS Alpha Version 5.0; NIST-95/1503; 5/1/96	DECstation 3000 Model 400; OpenVMS Alpha Version 6.2	DEC 2000 Model 300, 500; Digital 2100 A500MP/A600MP; DEC 3000 Models 300, 300L, 300X, 300LX, 400, 400S, 500, 500S, 500X, 600, 600S, 700, 800, 800S, 900, DEC 4000 Models 600, 700; DEC 7000 Model 600; 10000 Model 600; OpenVMS Alpha, Version 6.2
	DEC C for Digital UNIX Version 4.2; NIST-95/1504; 5/1/96	DEC 3000 Model 400 Alpha; Digital UNIX Version 3.2	DEC 2000 Models 300 AXP, 500; DEC 3000 Models 300, 300L, 300X, 300LX, 400, 400S, 500, 500S, 500X, 600, 600S, 700, 800, 800S, 900; Alpha Server 2000 4/200, 2100 4/200, 4/275; DEC 4000 models 6xx, 7xx; DEC 7000 models 6xx, 7xx; DEC 10000 models 6xx, 7xx; Alpha Server 1000 4/200; Alpha Station 200 4/166, 4/233; 400 4/233, AXPpci 33, AXPvme 64, 160; Digital UNIX, Version 3.2

C PROCESSORS, *Continued*

C -
Certificates

SUPPLIER	PROCESSOR ID; VSR#; SUBSET; EXPIRY DATE	HARDWARE; OPERATING SYSTEM	OTHER ENVIRONMENTS
	Digital UNIX C Compiler Version 3.2; NIST-95/1505; 5/1/96	DEC 3000 Model 400 AXP; Digital UNIX Version 3.2	DEC 2000 Models 300 AXP, 500; DEC 3000 Models 300, 300L, 300X, 300LX, 400, 400S, 500, 500S, 500X, 600, 600S, 700, 800, 800S, 900; Alpha Server 2000 4/200, 2100 4/200, 4/275; DEC 4000 models 6xx, 7xx; DEC 7000 models 6xx, 7xx; DEC 10000 models 6xx, 7xx; Alpha Server 1000 4/200; Alpha Station 200 4/166, 4/233; 400 4/233, AXPpci 33, AXPvme 64, 160; Digital UNIX, Version 3.2
Hewlett- Packard Company	HP C/HP-UX Version A.10.00 Release HP-UX B.10.00; NIST-95/1101; 1/1/96	HP9000 Model 755; HP-UX Version B.10.00	HP9000 Models 8xx, 7xx, 6xx, FxO, GxO, HxO, IxO; HP-UX Version 9.0
	HP C/iX Version A.05.10 Release A.05.10A; NIST-95/1102; 1/1/96	HP3000 Model 967; MPE/iX Version X.50.20 Release 5.0	HP3000 Model 9xx; MPE/iX Version X50.20 Release 5.0
IBM Canada Ltd.	IBM ILE C/400 Version 3 Release 1; NIST-94/2123; 11/1/95	AS/400; OS/400 Version 3 Release 1	
	IBM Visual Age C++ for OS/2 Version 3; NIST-95/2041; 7/1/96	Intel 80486 100mh OS/2 Warp Version 3	IBM models 8535, 8540, 855x, 8565, 857x, 8580, 859x, 9533, 9545, 955x, 9576, 9577, 9585, 959x, 638x, 648x, 649x, 657x, 658x, 68xx, 864x, 550, 720, 510, 510Cs, 340, 355, 360, 701, 750, 755, 700 OS/2 2.11 - Warp Version 3.0
	IBM C Set++ for AIX Version 3 Release 1; NIST-95/2211; 11/1/96	IBM RISC SYSTEM/6000 Model 530 IBM AIX Version 4 Release 1	IBM RISC System/6000 (All Models) IBM AIX Version 4 Release 1
	IBM C Set++ for AIX Version 2 Release 1; NIST-95/2212; 11/1/96	IBM RISC SYSTEM/6000 Model 520 IBM AIX Version 3 Release 2	IBM RISC System/6000 (All Models) IBM AIX Version 3 Release 2
	IBM C Set++ for Solaris Version 1 Release 1; NIST-95/2213; 11/1/96	SUN SPARCstation Model 10 Solaris Version 2 Release 4	SUN SPARCstation (All Models) Solaris Version 2 Release 4 SUN SPARCstation (All Models) SUN OS Version 5 Release 4
	IBM XL C Compiler Version 1 Release 3; NIST-95/2214; 11/1/96	IBM RISC SYSTEM/6000 Model 520 IBM AIX Version 3 Release 2	IBM RISC System/6000 (All Models) IBM AIX Version 3 Release 2
	IBM C for AIX Version 3 Release 1; NIST-95/2215; 11/1/96	IBM RISC SYSTEM/6000 Model 530 IBM AIX Version 4 Release 1	IBM RISC System/6000 (All Models) IBM AIX Version 4 Release 1
Intergraph Corporation	Clipper Advanced Optimizing C Version 1.57; NIST-95/1163; 1/1/96	Clipper Model C400- 2430; CLIX Version 7.5	Clipper C300 and C400; CLIX Version 7.5

C PROCESSORS, *Continued*

C -
Certificates

SUPPLIER	PROCESSOR ID; VSR#; SUBSET; EXPIRY DATE	HARDWARE; OPERATING SYSTEM	OTHER ENVIRONMENTS
	Clipper Advanced Optimizing C Version 2.01; NIST-95/1164; 1/1/96	Clipper Model C400- 2430; CLIX Version 7.5	Clipper C300 and C400; CLIX Version 7.5
Microsoft Corporation	Microsoft C/C++ Optimizing Compiler Version 9.00 Release Microsoft Visual C++ Version 2.0; NIST-94/2141; 10/1/95	MIPS/NEX Model Image RISCStation; Microsoft Windows NT Version 3.5	Unisys X-Series Deskside/LX; Compaq Deskpro XE560; IBM Valuepoint 6384-199; Microsoft Windows NT Version 3.5
	Microsoft C/C++ Optimizing Compiler Version 9.00; Release Microsoft Visual C++ Version 2.0; NIST-94/2142; 10/1/95	Unisys X-Series Deskside/LX, model x-series Deskside/LX Microsoft Windows NT Version 3.5	Unisys X-Series Deskside/LX; Compaq Deskpro XE560; IBM Valuepoint 6384-199; Microsoft Windows NT Version 3.5
	Microsoft C/C++ Optimizing Compiler Version 9.00; Release Microsoft Visual C++ Version 2.0; NIST-94/2143; 10/1/95	Compaq Model Deskpro XE560; Microsoft Windows NT Version 3.5	Unisys X-Series Deskside/LX; Compaq Deskpro XE560; IBM Valuepoint 6384-199; Microsoft Windows NT Version 3.5
	Microsoft C/C++ Optimizing Compiler Version 9.00; Release Microsoft Visual C++ Version 2.0; NIST-94/2144; 10/1/95	IBM Valuepoint 6384-199 Microsoft Windows NT Version 3.5	Unisys X-Series Deskside/LX; Compaq Deskpro XE560; IBM Valuepoint 6384-199; Microsoft Windows NT Version 3.5
	Microsoft C/C++ Optimizing Compiler Version 10.00 Release Visual C++ 4.0 NIST-95/2121; 10/1/96	Dell Omniplex 590; Windows NT Version 3.51 Windows 95	
Pyramid Technology Corp.	DC/OSx ANSI C, Version 4.0 Release c08x; NIST-95/1621; 5/1/96	MIserver-ES; DC/OSx Version 1.1 Release c07x	
	DC/OSx ANSI C, Version 4.0 Release d08x; NIST-95/1622; 5/1/96	Nile; DC/OSx Version 1.1 Release d08x	
	DC/OSx ANSI C, Version 4.0 Release m07x; NIST-95/1623; 5/1/96	Reliant RM1000; DC/OSx Version 1.1 Release m07x	

C PROCESSORS, *Continued*

C -
Certificates

SUPPLIER	PROCESSOR ID; VSR#; SUBSET; EXPIRY DATE	HARDWARE; OPERATING SYSTEM	OTHER ENVIRONMENTS
SCO Canada, Inc.	SCO OpenServer Development System Release 5; NIST-95/1941; 7/1/96	DELL 486 Model 433/ME; SCO OpenServer Release 5	
Sequent Computer Systems, Inc.	ptx/C Version 4.0 NIST-95/1242; 2/1/96	SE20; DYNIX/ptx Version 4.0	S2000/290, /490, /790 SE60, SE90, ELS, SE30, SE70, SE100; DYNIX/ptx Version 4.0
Silicon Graphics Computer Systems, Inc.	C Version SC4-ANSIC-3.19; NIST-94/1443; 10/1/95	4D/CRIM model IP17; IRIX Version 5.3	
	MIPS PRO C Version SC4-ANSIC-6.0; NIST-94/1444; 10/1/95	Challenge model IP21; IRIX Version 6.0	
Tandem Computers Incorporated	C Release D30; NIST-94/2182; 12/1/95	Himalaya Range Model K10000 Open System Services on NonStop Kernel Release D30	Himalaya Range K100, K1000 Open System Services on NonStop Kernel Release D30
	C Release D30; NIST-94/2181; 12/1/95	Himalaya Range Model K10000; Guardian on NonStop Kernel Release D30	Himalaya Range K100, K1000; Guardian on NonStop Kernel Release D30
Tisoft, Inc.	Green Hills C Compiler Version 1.8.7; NIST-94/2201; 12/1/95	Compaq ProLiant 2000 Model 5/66; SCO UNIX Release 3.2 Version 4.2	Compaq ProLiant 1000 486DX2/66, 2000 model 5/90 SCO Unix Release 3.2 Version 4.2 Compaq ProLiant 2000 Model 5/90 (Dual) Compaq ProLiant 4000 Model 5/90 (QUAD) SCO Unix Release 3.2 Version 4.2 w/SCO MPX Multi-processor Extension Release 3.0
Unisys	UCS C (UC) Version 4R3 Release SB5R3; NIST-95/1043; 1/1/96	2200 Model 900; 2200 OS EXEC Version 44R3 Release SB5R3	2200 Model 500 2200 OS EXEC Version 44R3 Release SB5R3

2.7.6 M[UMPS] PROCESSORS

No entries at this time.

2.8 LANGUAGE PROCESSORS WITH REGISTERED REPORTS ONLY

No entries at this time.

3. DATABASE LANGUAGE (SQL)

3.1 FIPS Database Language Standards

As specified by the FIPS, FIRMR and the associated Federal ADP and Telecommunications Standards Index, Federal agencies, when acquiring SQL processors, are responsible for assuring that processors are in accordance with the applicable FIPS PUB 127, Database Language SQL. On December 3, 1993, FIPS PUB 127-2 superseded FIPS PUB 127-1.

3.2 Organization of Database Language Processor Entries

Each entry in the VPL is a very limited extract from the Validation Summary Report (VSR) available from the Software Standards Validation Group at NIST. See 3.4 and 3.5 below.

Products validated for conformance to FIPS PUB 127-2 are listed. Products that demonstrated one or more nonconformities, as assessed by the SQL Validation System, are listed separately at the end. (These products are considered "provisionally" validated, pending correction of nonconformities.) The entries in the VPL for database language processors are presented as follows:

- The **VENDOR** column contains the name of the Vendor of the processor.
- The second column contains the name of the processor, its version number, the VSR number, the Expiry date of the Validation Certificate or the Registered VSR, and the hardware and operating system on which the testing was done. The term "Pre-release" means that the vendor has designated the SQL processor as "not commercially available" at the time of validation. The product is listed to assist users in planning for future procurements. The term "Vendor-Tested Port" means the Vendor has complied with CSL procedures for self-testing a ported version of a registered SQL processor. NIST has reviewed Vendor test results and determined them to be equivalent to those in the referenced BASE VSR.
- The **INTERFACES & COMPILERS** column contains the names of associated interactive SQL or programming language interfaces, and identification of the programming language compilers that interface with the SQL processor. A listing in the **COMPILERS** column is not an indication that the compiler has been validated for the applicable programming language standard. See the preceding "Programming Languages" Section for a list of validated compilers.
- The last column entries column include other hardware and operating system environments in which the processor operates, and the programming language compilers that interface with the SQL processor. The listings of the compilers and operating systems may contain a range of versions that are supported. Rebadged or renamed software are also listed here. This column is restricted to binary-compatible hardware environments. This column also lists the number and type of nonconformities for each programming language interface tested. "Schema" nonconformities are deficiencies in support for standard schema definition language constructs. "FIPS Flagger" in this column indicates that the mandatory FIPS Flagger requirement of FIPS 127 was not implemented. Refer to the VSR for details. The number of nonconformities is only one limited measure of the quality of an SQL interface. It is more important to analyze the nature of each individual nonconformity and its impact on meeting user requirements.

3.3 Validation Requirements

Refer to Database Language SQL Validation Procedures. The requirements for validation of database language processors are the same as those for programming language processors, listed in section 2.3.1, with several exceptions. Expired VSRs are deleted from the VPL to motivate vendors to test new releases of

their SQL processors and to demonstrate conformance to more comprehensive versions of the SQL Test Suite. Information about expired VSRs or vendor self-testing with the SQL Test Suite may be available from the vendor.

3.4 Certificate of Validation

A Certificate of Validation is issued for those SQL processors that have been tested and are considered to be in compliance with FIPS as specified by the FIPS, by the FIRMR, and the associated Federal ADP and Telecommunications Standards Index.

3.5 Registered Report

A Validation Summary Report (VSR) that indicates that the SQL processors did not meet the criteria for a Certificate of Validation may be registered by the Computer Systems Laboratory. A VSR is considered registered by CSL when it contains a signed notice that the VSR will be listed in the CSL Validated Products List (VPL).

3.6 Validation Procedures

SQL processors are tested in accordance with the procedures described in the NIST Database Language SQL Validation Procedures. To request a copy of the validation procedures and/or to request the validation of an SQL processor, contact:

National Institute of Standards and Technology
Computer Systems Laboratory
Software Standards Validation Group
Building 225, Room A266
Gaithersburg, Maryland 20899 (U.S.A.)
Telephone (301) 975-2490 (Voice)
(301) 975-3274 (Voice)
(301) 948-6213 (FAX)
e-mail: dashiell@speckle.ncsl.nist.gov (INTERNET)

3.7 SQL Validation System

To request a copy of the SQL Validation System and/or to submit questions regarding the SQL Validation System, contact:

National Institute of Standards and Technology
Computer Systems Laboratory
Database Languages Group
Building 225, Room A266
Gaithersburg, Maryland 20899 (U.S.A.)
Telephone (301) 975-3258 (Voice)
(301) 975-3263 (Voice)
(301) 948-6213 (FAX)
e-mail: sullivan@speckle.ncsl.nist.gov (INTERNET)

3.8 Availability of Validation Summary Report by FTP

ASCII formatted Validation Summary Reports are available in electronic media using the following instructions:

1. Type: `ftp speckle.ncsl.nist.gov` (internet address is 129.6.59.2)
2. Login as user `ftp`
3. Type your e-mail address preceded by a dash (-) as the password
4. Type: `cd sql-testing/VSRs`
5. Type: `ascii`
6. Type: `get` and the name of the file you want. e.g., `README.TXT`.

The README.TXT file contains disclaimer information; read this file for important information regarding potentially missing information from the VSR.

3.8 SQL PROCESSORS

VENDOR	PROCESSOR ID; VSR#; SUBSET; & EXPIRY DATE; HARDWARE; OPERATING SYS.	INTERFACES & COMPILERS	OTHER HW/SW ENVIRONMENTS
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FIPS 127-2 - ZERO NONCONFORMITIES

[Entry FIPS 127-2 exceeds requirements for FIPS 127-1 with Integrity Enhancement Option]

AT&T Global Information Solutions	<p>Teradata DBS, Version 5.F.0 (Pre-release); NIST-94/7150; 12/31/95;</p> <p>Client: Amdahl 5890-600E; IBM MVS XA, V. 2.2.0 Server: DBC/1012 Model 4 DBMS runs native to hardware</p> <p>Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults</p>	<p>Embedded C C Preprocessor 2, V. 5.2 (Pre-release) SAS C, Version 500.G Embedded COBOL COBOL Preprocessor 2, V. 5.2 (Pre-release) IBM VS COBOL II, Release 3.1 Interactive SQL (FIPS Default)</p>	
Informix Software, Inc.	<p>Informix-OnLine Version 7.10; NIST-95/7011; 12/31/95;</p> <p>SUN SPARCserver 690 MP; Solaris Version 2.4</p> <p>Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults</p>	<p>Embedded C INFORMIX-ESQL/C Version 7.10 Sunsoft SPARCCompiler Version C3.0 Embedded COBOL INFORMIX-ESQL/COBOL Version 7.10 Microfocus COBOL Version V3.1.35</p>	
	<p>Informix-OnLine/Secure Version 7.10; NIST-95/7012; 12/31/95;</p> <p>SUN SPARCstation 10; Solaris Version 2.4</p> <p>Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults</p>	<p>Embedded C INFORMIX-ESQL/C Version 7.10 Sunsoft SPARCCompiler Version C3.0 Embedded COBOL INFORMIX-ESQL/COBOL Version 7.10 Microfocus COBOL Version V3.1.35</p>	
	<p>Informix-OnLine Version 7.10; NIST-95/7013; 12/31/95;</p> <p>SUN SPARCstation 10; Solaris Version 2.4</p> <p>Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults</p>	<p>Module Ada INFORMIX-ADA/SAME Version 6.0 Sun SPARCworks ADA Version 2.1</p>	

SQL PROCESSORS, *Continued*SQL -
Certificates

VENDOR	PROCESSOR ID; VSR#; SUBSET; & EXPIRY DATE; HARDWARE; OPERATING SYS.	INTERFACES & COMPILERS	OTHER HW/SW ENVIRONMENTS
	Informix-OnLine Version 7.10 NIST-95/7031; 5/30/96; Intel Express XLX8TEFS w/ Intel 80486DX2-66; Microsoft Windows N.T. Workstation/Server 3.5	Embedded C INFORMIX-ESQL/C Version 7.10 Microsoft Visual C/C++ Version 2.00 Interactive SQL INFORMIX-OnLine	Any hardware certified to run Microsoft Windows N.T. Workstation/Server 3.5
	Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults		
	Informix-OnLine Version 7.10 NIST-95/7032; 5/30/96; Intel Express XLX8TEFS w/ Intel Pentium; Microsoft Windows N.T. Workstation/Server 3.5	Embedded C INFORMIX-ESQL/C Version 7.10 Microsoft Visual C/C++ Version 2.00 Interactive SQL INFORMIX-OnLine	Any hardware certified to run Microsoft Windows N.T. Workstation/Server 3.5
	Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults		
Oracle Corporation	ORACLE7, Release 7.1; NIST-94/7141; 6/30/96; SUN SPARCstation 10; SunOS V. 5.3	Embedded C Pro*C, V. 1.6 SPARCCompiler C Rel. 3.0	
	Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults		
	ORACLE7, Release 7.1; NIST-94/7142; 6/30/96; Sequent 2000/700; DYNIX/ptx V. 2.1	Embedded C Pro*C, V. 1.6, 2.0 DYNIX/ptx Native C	
	Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults		
	ORACLE7, Release 7.1; NIST-94/7143; 6/30/96; SUN SPARCstation 10; SunOS Version 4.1.3	Module C SQL*Module for C Version 1.0 SPARCCompiler C Rel. 3.0	

SQL PROCESSORS, *Continued*

VENDOR	PROCESSOR ID; VSR#; SUBSET; & EXPIRY DATE; HARDWARE; OPERATING SYS.	INTERFACES & COMPILERS	OTHER HW/SW ENVIRONMENTS
<p>Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults</p>	<p>Oracle Rdb for OpenVMS VAX Version 6.0; NIST-94/7111; 03/31/96;</p> <p>VAXstation 3500; OpenVMS VAX, V. 5.4-3</p>	<p>Embedded Ada Module Ada VAX Ada Version 2.3 Embedded C Module C VAX C Version 3.2 Embedded COBOL Module COBOL VAX COBOL Version 5.1 Embedded FORTRAN Module FORTRAN VAX FORTRAN Version 5.8 Embedded PASCAL Module PASCAL VAX Pascal Version 4.4 Interactive SQL (FIPS Default)</p>	<p>VAX 4000 Models 100, 200, 300, 400, 500, 600; VAX 6000 Models 200, 300, 400, 500, 600; VAX 7000 Model 600; VAX 8200, 8250, 8300, 8350, 8500, 8530, 8550, 8598, 8600, 8650, 8700, 8800, 8810, 8820, 8830, 8840; VAX 9000 Models 110, 210, 300, 400; VAX 10000 Model 600; VAXft 3000 Models 110, 310, 410, 610, 612; VAX-11/730, VAX-11/750, VAX-11/780, VAX-11/785; MicroVAX's II, 2000, 3100 Models 10/10E, 20/20E, 30, 40, 80, 90; MicroVAX's 3200, 3300, 3400, 3500, 3600, 3800, 3900; VAXstation's II, 2000, 3100 Models 30, 38, 40, 48, 76; VAXstation's 3200, 3500, 3520, 3540, 4000 Models 60, 90, VLC; VAXservers 3100, 3200, 3300, 3400, 3500, 3600, 3800, 3900, 4000 Models 200, 300, 400, 500, 600, 700; VAXserver 6000 Models 200, 300, 400, 500, 600 Series; VAXservers 8200, 8250, 8300, 8350, 8530, 8550, 8600, 8650, 8700, 8800, 8810, 8830, 8840 OpenVMS VAX, Vers. 5.4, 5.5, 6.0</p>
<p>Oracle Rdb for OpenVMS AXP Version 6.0; NIST-94/7112; 03/31/96;</p> <p>DEC 2000 Model 300; OpenVMS AXP, V. 1.5</p> <p>Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults</p>	<p>Embedded Ada Module Ada DEC Ada for OpenVMS AXP, Version 3.0 Embedded C Module C DEC C for OpenVMS AXP, Version 1.3 Embedded COBOL Module COBOL DEC COBOL for OpenVMS AXP, Version 1.1 Embedded FORTRAN Module FORTRAN DEC FORTRAN for OpenVMS AXP, V.6.1 Embedded PASCAL Module PASCAL DEC Pascal for OpenVMS AXP, Version 5.1 Interactive SQL (FIPS Default)</p>	<p>VAX Ada V2.0 - 2.3 VAX C V3.0 - 3.2 VAX COBOL V4.2-4.4 VAX COBOL V5.0-5.1 VAX Fortran V5.0 - 5.9 VAX Pascal V4.0 - 4.4</p> <p>DEC 2000 Model 300, DEC 3000 Models 300, 400 AXP Workstation, DEC 3000 Model 400 AXP Server, DEC 3000 Model 500 AXP Workstation, DEC 3000 Model 500 AXP Server, DEC 4000 Model 610 AXP System, DEC 7000 Model 610 AXP System, DEC 10000 Model 610 AXP System OpenVMS AXP Ver. 1.5</p> <p>DEC Ada for OpenVMS AXP V.3.0 DEC C for OpenVMS AXP V. 1.3-1.4 DEC COBOL for OpenVMS AXP V. 1.1-2.0 DEC Fortran for OpenVMS AXP V.6.1-6.2 DEC Pascal for OpenVMS AXP V.5.0-5.1</p>	

SQL PROCESSORS, *Continued*SQL -
Certificates

VENDOR	PROCESSOR ID; VSR#; SUBSET; & EXPIRY DATE; HARDWARE; OPERATING SYS.	INTERFACES & COMPILERS	OTHER HW/SW ENVIRONMENTS
Software AG	ADABAS D, Version 6.1.1; NIST-95/7021; 7/31/96; HP 9000/715 HP-UX Release 9.05 Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults	Schema Processor LOAD, utility bundled with ADABAS D Embedded C C Pre-compiler bundled with ADABAS D C compiler, Version A.09.69 bundled with HP-UX	
	ADABAS D, Version 6.1.1; NIST-95/7022; 7/31/96; HP 9000/715 HP-UX Release 9.05 Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults	Schema Processor LOAD, utility bundled with ADABAS D Embedded COBOL COBOL Pre-compiler bundled with ADABAS D Microfocus COBOL, Version v3.245	
	ADABAS D, Version 6.1.1; NIST-95/7023; 7/31/96; IBM RS6000 320H AIX Version 3.2 upgrade 3250 Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults	Schema Processor LOAD, utility bundled with ADABAS D Embedded C C Pre-compiler bundled with ADABAS D C compiler, Version 1.3 bundled with AIX Version 3.2 upgrade 3250	
	ADABAS D, Version 6.1.1; NIST-95/7024; 7/31/96; IBM RS6000 320H AIX 3.2 upgrade 3250 Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults	Schema Processor LOAD, utility bundled with ADABAS D Embedded COBOL COBOL Pre-compiler bundled with ADABAS D Microfocus COBOL, Version 3.235	
	ADABAS D, Version 6.1.1; NIST-95/7025; 7/31/96; INTEL 486 Processor DX 2/66 Windows NT Version 3.5 Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults	Schema Processor LOAD, utility bundled with ADABAS D Embedded C C Pre-compiler bundled with ADABAS D Microsoft 32-bit C/C++ Optimizing Compiler, Version 9.00 for 80x86	

SQL PROCESSORS, *Continued*

VENDOR	PROCESSOR ID; VSR#; SUBSET; & EXPIRY DATE; HARDWARE; OPERATING SYS.	INTERFACES & COMPILERS	OTHER HW/SW ENVIRONMENTS
	<p>ADABAS D, Version 6.1.1; NIST-95/7026; 7/31/96;</p> <p>INTEL 486 Processor DX 2/66 Windows NT Version 3.5</p> <p>Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults</p>	<p>Schema Processor LOAD, utility bundled with ADABAS D Embedded COBOL COBOL Pre-compiler bundled with ADABAS D Microfocus COBOL, Version 3.G.19</p>	
	<p>ADABAS D, Version 6.1.1; NIST-95/7027; 7/31/96;</p> <p>INTEL 486 Processor DX 2/66 OS/2, Warp</p> <p>Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults</p>	<p>Schema Processor LOAD, utility bundled with ADABAS D Embedded C C Pre-compiler bundled with ADABAS D IBM C/C++ Tools, Version 2.01</p>	
	<p>ADABAS D, Version 6.1.1; NIST-95/7028; 7/31/96;</p> <p>INTEL 486 Processor DX 2/66 OS/2, Warp</p> <p>Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults</p>	<p>Schema Processor LOAD, utility bundled with ADABAS D Embedded COBOL COBOL Pre-compiler bundled with ADABAS D Microfocus COBOL, Version 3.G.19</p>	
	<p>ADABAS D, Version 6.1.1; NIST-95/7029; 7/31/96;</p> <p>INTEL 486 Processor SCO UNIX Rel 3.2 Ver 4.0</p> <p>Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults</p>	<p>Schema Processor LOAD, utility bundled with ADABAS D Embedded C C Pre-compiler bundled with ADABAS D C compiler bundled with SCO UNIX Release 3.2, Version 4.0</p>	
	<p>ADABAS D, Version 6.1.1; NIST-95/702A; 7/31/96;</p> <p>INTEL 486 Processor SCO UNIX Rel 3.2 Ver 4.0</p> <p>Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults</p>	<p>Schema Processor LOAD, utility bundled with ADABAS D Embedded COBOL COBOL Pre-compiler bundled with ADABAS D Microfocus COBOL, Version 3.141</p>	

SQL PROCESSORS, *Continued*SQL -
Certificates

VENDOR	PROCESSOR ID; VSR#; SUBSET; & EXPIRY DATE; HARDWARE; OPERATING SYS.	INTERFACES & COMPILERS	OTHER HW/SW ENVIRONMENTS
	ADABAS D, Version 6.1.1; NIST-95/702B; 7/31/96; SPARC STATION 2 Solaris Release 2.3 Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults	Schema Processor LOAD, utility bundled with ADABAS D Embedded C C Pre-compiler bundled with ADABAS D C compiler Version SC 2.0.1 bundled with Solaris Release 2.3	
	ADABAS D, Version 6.1.1; NIST-95/702C; 7/31/96; SPARC STATION 2 Solaris Release 2.3 Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults	Schema Processor LOAD, utility bundled with ADABAS D Embedded COBOL COBOL Pre-compiler bundled with ADABAS D Microfocus COBOL Version 3.238	
	ADABAS D, Version 6.1.1; NIST-95/702D; 7/31/96; DEC 3000 AXP Model 500 DEC OSF/1 Version 2.0 Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults	Schema Processor LOAD, utility bundled with ADABAS D Embedded C C Pre-compiler bundled with ADABAS D C compiler Version 4.2.8.2 bundled with DEC OSF/1	
	ADABAS D, Version 6.1.1; NIST-95/702E; 7/31/96; DEC 3000 AXP Model 500 DEC OSF/1 Version 2.0 Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults	Schema Processor LOAD, utility bundled with ADABAS D Embedded COBOL COBOL Pre-compiler bundled with ADABAS D Microfocus COBOL Version 3.253	
Sybase, Inc.	Sybase System 10 GA Release 10.0.1; NIST-94/7131; 4/30/96; Client: Sun 4/25 SunOS V. 4.1.3 Server: Sun 4/25 SunOS V. 4.1.3	Schema Processor Interactive SQL (isql) Release 10.0.1 Embedded C Sybase System 10 Embedded SQL/C GA 10.0.1 gcc version 2.3.1	

SQL PROCESSORS, *Continued*

SQL -
Certificates

VENDOR	PROCESSOR ID; VSR#; SUBSET; & EXPIRY DATE; HARDWARE; OPERATING SYS.	INTERFACES & COMPILERS	OTHER HW/SW ENVIRONMENTS
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Features Tested:
Entry FIPS 127-2
FIPS Sizing Defaults

FIPS 127-2 - ONE OR MORE NONCONFORMITIES

[Entry FIPS 127-2 exceeds requirements for FIPS 127-1 with Integrity Enhancement Option]

No entries for this quarter.

4. GRAPHICS CONFORMANCE TESTING

4.1 FIPS GKS Standard

The Graphical Kernel System (GKS) is a two-dimensional graphics tool box which provides for the display and manipulation of pictures and graphical input from the operator. The purpose of GKS is to promote portability of graphics applications for use on a variety of graphics workstations. It provides a functional interface between an application program and a configuration of graphical devices. The interface is at such a level of abstraction that hardware peculiarities are shielded from the application program.

FIPS PUB 120-1, GKS, is the first Federal Information Processing Standard Publication (FIPS PUB) registered for computer graphics systems. In accordance with FIPS PUB 120-1, two-dimensional graphics toolbox packages acquired for Federal use after November 3, 1986 should implement FIPS GKS. Conformance testing of GKS implementations protects Federal investment by ensuring adherence to the graphics standard. FIPS PUB 120-1 requires that GKS implementations offered to Federal agencies be tested using the NIST Test Suite to ensure that a particular implementation meets the specifications of the FIPS. The GKS Validation Test Suite (Fortran) is available from:

Ms. Susan Sherrick
National Institute of Standards and Technology
Building 225, Room A266
Gaithersburg, MD 20899
(301) 975-3268

4.1.1 Organization of GKS Entries

The entries in the VPL for GKS implementations are presented as follows:

- The **VENDOR** column contains the name of the Vendor of the implementation.
- The next column contains the name of the implementation, its version number, the Expiry date of the certificate of validation, the VSR number, and level of GKS that was validated.
- The **HARDWARE & OP. SYSTEM** column presents the hardware and operating system environment used during the validation.
- The last column includes the graphics devices that were validated, and any other environments that have been registered.

4.2 FIPS PHIGS Standard

PHIGS stands for Programmer's Hierarchical Interactive Graphics System. PHIGS is a system for interactive 3-dimensional (3D) graphics applications that provides programmers with a set of features enabling them to manipulate and display complex 3D objects. It is called hierarchical because the complex objects can be built up from simpler objects. PHIGS also provides a rich set of facilities for real-time interaction with the user. While it borrows many concepts from the Graphical Kernel System (GKS) standard, it also introduces many new features, such as a "graphics data base" (the centralized structure store), and support for modeling and viewing.

In accordance with FIPS PUB 153, (PHIGS), 3D graphics packages acquired for Federal use should implement FIPS PHIGS. Conformance testing of PHIGS implementations protects Federal investment by ensuring adherence to the graphics standard. FIPS PUB 153 requires that PHIGS implementations offered to Federal agencies be tested using the NIST PVT (PHIGS Validation Tests) test suite. The test suite ensures that a particular implementation meets the specifications set forth in the FIPS. The PHIGS PVT test suite is available from:

Project Leader, PHIGS Validation Tests
National Institute of Standards and Technology
Computer Systems Laboratory
Bldg. 225, Room A-266
Gaithersburg, MD 20899
phone: (301) 975-3265
e-mail: phigs@speckle.ncsl.nist.gov

4.2.1 Organization of PHIGS Entries

The entries in the VPL for PHIGS implementations are as follows:

- The **VENDOR** column contains the name of the vendor of the implementation.
- The **PHIGS** name column contains the name of the implementation, its version number, the Validation Summary Report (VSR) number, and the expiry date of the certification of validation.
- The **HARDWARE & OP.SYSTEM** column presents the hardware and operating system environment used during the validation.
- The **GRAPHICS DEVICES** column includes the graphics devices that were validated.
- The entries in the **REGISTERED ENVIRONMENTS HW/OS** column includes registered hardware and operating systems for the implementation tested. The vendor of the implementation has certified that the identified processor, when operating under the environments included in this column, produces the same test results exhibited during the validation. Test results and other information from these environments may be required as evidence for entries to be included in this column.
- The **NONCONFORMITIES** column indicates whether or not the PHIGS implementation conforms to the FIPS in one or more cases as evidenced by the validation. The VSR should be reviewed for more details of the nonconformities.

4.3 FIPS CGM Standard

Federal Information Processing Standard Publication (FIPS PUB) 128-1, Computer Graphics Metafile (CGM), is a data interchange standard for the storage and retrieval of picture information in a device independent manner. The purpose of the CGM is to facilitate the transfer of graphical information among different computer systems, graphical devices, and/or applications.

The FIPS PUB 128-1 requires the use of application profiles. In particular, FIPS PUB 128-1 requires the use of military specification MIL-D-28003A, commonly known as the Continuous Acquisition and Life-Cycle Support (CALS) CGM Application Profile (AP).

The NIST CGM Validation Test Service is divided into three testing programs: metafile, generator, and interpreter testing. The purpose of the Test Service is to determine the degree to which the metafile, CGM generator, or CGM interpreter conforms to the FIPS 128-1. Presently, the NIST CGM Validation Test Service addresses only CGM Version 1.

The CGM test suites are available from:

National Institute of Standards and Technology (NIST)
Computer Systems Laboratory
CGM Test Service
Technology Building, Room A266
Gaithersburg, MD 20899
phone: (301) 975-3265
e-mail: cgminfo@.nist.gov

4.3.1 Organization of CGM Entries

The entries in the VPL for CGM Interpreter implementations are presented as follows:

- **VENDOR** column contains the name of the Vendor of the implementation.
- The next column contains the name of the implementation, its version number, the Expiry date of the certification of validation, the VSR number, Color Conformance Level.
- The **HARDWARE & SOFTWARE** column presents the hardware and operating system environment, and output devices used during the validation.
- The last column includes any registered environments and indicates whether or not the implementation conforms to the FIPS. The VSR should be reviewed for more details of the nonconformities.

The entries in the VPL for metafiles are a very limited extract from the Validation Summary Report (VSR) available from NIST/CSL.

4.4 Raster Graphics Standards

FIPS PUB 150 adopts EIA-538 which defines the facsimile coding schemes and their control functions for Group 4 facsimile apparatus, i.e., ITU-T (formerly CCITT) Recommendation T.6. It defines a standard compression algorithm (T.6 - Group 4) suitable for the storage, retrieval, and interchange of raster graphics images.

Military Specification MIL-R-28002 specifies the structure and encoding of raster data files to be delivered to the government. It specifies the use of the standard compression algorithm defined in FIPS PUB 150. It also specifies the use of standard file headers which are defined in MIL-STD-1840. MIL-STD-1840 standardizes the format and structure of digital technical data files for the purpose of interchange between organizations or systems.

4.4.1 Certificate of Validation

The Raster Graphics Validation Test Service tests an implementation's capability of both receiving and generating raster graphics data conforming to the specifications in FIPS PUB 150 and MIL-R-28002.

A certificate of validation is issued for an implementation that passes the validation test and conforms to FIPS PUB 150 and MIL-R-28002.

4.4.2 Information Pack

Upon request, a Raster Graphics Validation Test Information Pack is available from:

National Institute of Standards and Technology (NIST)
Computer Systems Laboratory
Raster Graphics Validation Test Service
Technology Building, Room A266
Gaithersburg, MD 20899
Telephone (301) 975-3265

4.5 GKS IMPLEMENTATIONS

GKS -

VENDOR	GKS NAME; EXPIRY DATE; VSR #; LEVEL	HARDWARE; OPERATING SYSTEM	GRAPHICS DEVICES; REGISTERED ENVIRONMENTS
Digital Equipment Corporation	DEC GKS Version 6.0 for Open VMS AXP Systems; 12/1/96; NIST/NCC-94/900; Level 2c	DEC System 3000/500; Open VMS AXP Version 6.1	Motif Workstation PostScript Workstation (using DEC LN03-A2 Laser Printer):
Digital Equipment Corporation	DEC GKS Version 6.0A for DEC OSF/1 AXP Systems; 12/1/96; NIST/NCC-94/901; Level 2c	DEC System 3000/500; DEC OSF/1 AXP Version 2.0	Motif Workstation PostScript Workstation (using DEC LN03-A2 Laser Printer):

4.6.1 CGM INTERPRETER IMPLEMENTATIONS

CGM -

VENDOR	NAME; EXPIRY DATE; VSR #; LEVEL	HARDWARE; SOFTWARE	NONCONFORMITY REGISTERED ENVIRONMENTS
Henderson Software, Inc.	HSlview, Version 1.15 9/97; NIST-I-95/001 Level 0, Level 2	PC/Pentium Dos 6.22, Windows 3.11 Viewsonic w/ Trident Board LaserJet II	None

4.6.2 COMPUTER GRAPHICS METAFILES

CGM -

CLIENT	VSR # & DATE; #CGM Submitted/Conforming	CGM/SIZE/DATE; GENERATOR	PLATFORM (As reported by Vendor)
Interleaf, Inc El Segundo, CA	NIST-M-92/003-001 9/2/92; 1/1	asg.cgm 8880 8/31/92; Interleaf Inc MDL/G	Interleaf 5 v5.3, HP9000/700, HP UX v8.07
IBM Corporation Federal Sector Division Oswego, NY	NIST-M-92/005-002 10/28/92; 5/5	gcgm_i220.cgm 5280 10/27/92; GRAFFPAK-CGM 1.1.2	IBM RS6000 Model 220, AIX 3.2
		gcgm_i530.cgm 5280 10/27/92; GRAFFPAK-CGM 1.1.2	IBM RS6000 Model 530, AIX 3.2
		gcgm_n345.cgm 5280 10/27/92; GRAFFPAK-CGM 1.1.2	NCR 3450, NCR UNIX SVR4
		gcgm_n355.cgm 5280 10/27/92; GRAFFPAK-CGM 1.1.2	NCR 3550, NCR UNIX SVR4
		gks_i530.cgm 23680 10/27/92; GRAFFPAK-GKS 4.0	IBM RS6000 Model 530, AIX 3.2
ESRI Boulder CO	NIST-M-93/006-003 1/26/93; 5/5	sun.cgm 181680 1/19/93; ARC/INFO	SUN SparcStation, Sun OS 4.1.3
		ibm.cgm 181680 1/19/93; ARC/INFO	IBM RS6000, AIX 3.2
		dg.cgm 181680 1/19/93; ARC/INFO	Data General AViiON, DG/UX 5.4.1
		dec.cgm 181680 1/19/93; ARC/INFO	DecStation 5000, ULTRIX 4.2a
		sgi.cgm 181680 1/19/93; ARC/INFO	Silicon Graphics Indigo, IRIX 4.0.2
EDS Herndon, VA	NIST-M-93/007-004 1/29/93; 3/3	demo5.cgm 13280 1/28/93; GRAFFPAK-GKS 4.0	SPARCStation 10 Model 30, Solaris 2.1
		demo7.cgm 5360 1/28/93; GRAFFPAK-GKS 4.0	SPARCStation 10 Model 30, Solaris 2.1
		demo8.cgm 3840 1/28/93; GRAFFPAK-GKS 4.0	SPARCStation 10 Model 30, Solaris 2.1

4.7 PHIGS APPLICATIONS

No entries at this time.

5. NIST POSIX CONFORMANCE TESTING

5.1 FIPS POSIX Standard

The National Institute of Standards and Technology through its Computer Systems Laboratory (NIST/CSL) has established a conformance testing program for the Federal Information Standard for POSIX (FIPS 151-1 and FIPS 151-2). FIPS 151-2 replaced FIPS 151-1 in its entirety on October 15, 1993. These standards are based on the IEEE POSIX Std. 1003.1-1988 (FIPS 151-1) and ISO/IEC 9945-1:1990 (FIPS 151-2). The testing model includes a Certification Authority, NVLAP Accredited Testing Laboratories, Clients and the official NIST POSIX Conformance Test Suites. The Certification Authority is the Director of NIST/CSL. The National Voluntary Laboratory Accreditation Program (NVLAP), part of NIST, accredits the testing laboratories. The test suites NIST-PCTS:151-1 and NIST-PCTS:151-2 were developed by NIST/CSL and are based on the test assertions specified by the IEEE Standard for Information Technology — Test Methods for Measuring Conformance to POSIX, IEEE Std. 1003.3-1991 (NIST-PCTS:151-1) and the IEEE Standard for Information Technology — Test Methods for Measuring conformance to POSIX.1, IEEE Std 2003.1-1992 (NIST-PCTS:151-2).

5.2 POSIX Test Procedures

There are Accredited POSIX Testing Laboratories (APTLs) accredited by NVLAP for using one or both test suites. NVLAP accreditation is renewable after one year, and identifies the specific testing procedures which the lab is authorized to run. The labs provide testing and analysis services to their clients and may forward the final test results to NIST/CSL for evaluation and subsequent issuance of a Certificate of Validation by NIST/CSL.

Testing policy documents and registers of validated products and accredited laboratories are available on an electronic mail (email) file server system. For most email systems, send an email message to posix@nist.gov (mail posix@nist.gov). The first line of the message should contain a command to send index (send posix/index). After issuing the send command and a carriage return, end the email message. A listing of all of the available files will be returned via email to the requesting email address.

5.3 POSIX Test Suite

The NIST-PCTS:151-2 is available from NIST/CSL, POSIX Certification Authority, Building 225 Room B266, National Institute of Standards and Technology, Gaithersburg, MD 20899.

5.4 Validation Requirements

An accredited lab may submit a "clean" test report to NIST/CSL for evaluation in anticipation of a Certification of Validation being issued. "Clean" implies no test assertion failures. The Certificate of Validation will confirm that the stated product has been tested using the official NIST-PCTS and that the test results have been validated by NIST/CSL. The Certificate of Validation and the Test Results Summary contain information on the product tested, the implementation that was tested, the suppliers, conditional features that were tested, configuration details and the identification of the testing laboratory. These certificates are issued by NIST/CSL through the testing lab. Fees for services by the testing labs are established by the labs.

5.5 TESTING LABORATORIES for NIST POSIX (FIPS 151-1)

The National Voluntary Laboratory Accreditation Program (NVLAP) has accredited the following laboratories to test computer operating system interfaces for conformance with the Federal Information Processing Standard 151-1 (FIPS 151-1) using the NIST POSIX Conformance Test Suite (NIST-PCTS:151-1). Only accredited laboratories may submit test reports to NIST/CSL for validation.

ACCREDITED NIST POSIX TESTING LABORATORIES

The National Voluntary Laboratory Accreditation Program (NVLAP) has accredited the following laboratories to test computer operating system interfaces for conformance with the Federal Information Processing Standard 151-1 (FIPS 151-1) using the NIST POSIX Conformance Test Suite (NIST-PCTS:151-1). Only accredited laboratories may submit test reports to NIST/CSL for validation.

BULL S.A. / Laboratoire POSIX
1 rue de Provence / BP208
38432 ECHIROLLES CEDEX (France)

Contact: Mr. Georges Chardon
Phone: (33) 76 39 75 93

DataFocus Incorporated
12450 Fair Lakes Circle, Suite 400
Fairfax, VA 22033-3831

Contact: Mr. Glen McPherson
Phone: 703-631-6770

Mindcraft, Inc.
410 Cambridge Avenue
Palo Alto, CA 94306

Contact: Mr. Bruce Weiner
Phone: 415-323-9000

PERENNIAL
4699 Old Ironsides Drive, Suite 210
Santa Clara, CA 95054

Contact: Mr. Barry E. Hedquist
Phone: 408-748-2900

Note: See updated listing of accredited testing laboratories on page 5-14.

5.6 VALIDATED PRODUCTS for NIST POSIX (FIPS 151-1)

NIST POSIX VALIDATED PRODUCTS

The following products have been tested by an Accredited POSIX Testing Laboratory (APTL) using the official National Institute of Standards and Technology POSIX Conformance Test Suite (NIST-PCTS:151-1) for the Federal Information Processing Standards Publication 151-1 (FIPS PUB 151-1). A Certificate of Validation has been issued by NIST/CSL. Additional information is available from NIST/CSL on conditional features supported, configuration details, and resolved test codes (if appropriate).

<u>PRODUCT SUPPLIERS</u>	<u>REFERENCE FILE #</u>	<u>SYSTEM SUPPLIERS</u>	<u>REFERENCE FILE #</u>
Amdahl Corporation	AMD5598	AGI Computer, Inc.	EVR0901
Apple Computer Inc.	APP2482, APP3355, APP7204, APP7224, APP7235, APP8616, APP9125, APP9165	Alpha Systems Lab	SUN3403
AT&T	ATT1566	Amdahl Corporation	AMD5598
BULL S.A.	BUL2387, BUL6051	Apple Computer Inc.	APP2482, APP3355, APP7204, APP7224, APP7235, APP8616, APP9125, APP9165
Control Data Corporation	CDC1101, CDC5574, CDC5750	AST Research, Inc.	SCO4120, UNV3055, UNV9180, USL2115, USL6259
CONVEX Computer Corporation	CON0202, CON2551, CON6027	AT&T	ATT1566, USL3610
Cray Research, Inc.	CRA2641	BULL S.A.	BUL2387, BUL6051
Data General Corporation	DGC2542, DGC4767, DGC8016, DGC8703, DGC9391, DGC9574	Compaq Computer Corporation	INT5154, LNX3076, SUN6859
Digital Equipment Corp.	DEC0319, DEC0638, DEC4670, DEC5794, DEC7386, DEC7833, DEC7917, DEC8003, DEC9418, DEC9672	Control Data Corporation	CDC1101, CDC5574, CDC5750
Encore Computer Corporation	ENC6897	CONVEX Computer Corp.	CON0202, CON2551, CON6027
ESIX/Everex Systems, Inc.	EVR0901, EVR9749	Cray Research, Inc.	CRA2641
Harris Corporation	HAR5240	Data General Corporation	DGC2542, DGC4767, DGC8016, DGC8703, DGC9391, DGC9574, SCO6748
Hewlett-Packard Company	HPC0115, HPC0303, HPC0535, HPC0603, HPC1581, HPC1992, HPC2540, HPC2698, HPC2952, HPC3574, HPC3760, HPC3897, HPC4246, HPC6304, HPC6391, HPC6637, HPC6906, HPC7051, HPC7716, HPC8098, HPC9185	Dell Computer Corporation	SUN1065
Interactive Systems Corp.	INT5154	Diamond Flower Incorporated	SCO3664, SCO8054
Intergraph Corporation	INT4675	Digital Equipment Corp.	DEC0319, DEC0638, DEC4670, DEC5794, DEC7386, DEC7833, DEC7917, DEC8003, DEC9418, DEC9672
International Business Machines, Inc.	IBM0320, IBM0458, IBM1344, IBM2592, IBM3697	Encore Computer Corporation	ENC6897
Lynx Real-Time Systems, Inc.	LNX3076	ESIX/Everex Systems, Inc.	EVR9749
Modular Computer Systems, Inc.	MOD4817	Harris Corporation	HAR5240
Motorola Computer Group	MOT1086, MOT5618	Hewlett-Packard Company	HPC0115, HPC0303, HPC0535, HPC1581, HPC1992, HPC2540, HPC2698, HPC2952, HPC3574, HPC3760, HPC3897, HPC4246, HPC603, HPC6304, HPC6391, HPC6637, HPC6906, HPC7051, HPC7716, HPC8098, HPC9185
NCR Corporation	NCR0554, NCR1448, NCR2047, NCR2805, NCR3061, NCR3331, NCR4518, NCR5533, NCR7380, NCR7549	Intergraph Corporation	INT4675
NeXT Computer, Inc.	NXT0623	International Business Machines	IBM0320, IBM0458, IBM1344, IBM2592, IBM3697
Pyramid Technology Corporation	PYR1271, PYR3067, PYR3233, PYR4970, PYR9863	Modular Computer Systems, Inc.	MOD4817
Santa Cruz Operation Inc.	SCO3664, SCO3832, SCO4102, SCO5199, SCO6748, SCO8054, SCO9875	Motorola Computer Group	MOT1086, MOT5618
Sequent Computer Systems Inc.	SEC8754	NCR Corporation	NCR0554, NCR1448, NCR2047, NCR2805, NCR3061, NCR3331, NCR4518, NCR5533, NCR7380, NCR7549
Silicon Graphics, Inc.	SGI5507, SGI9297	NeXT Computer, Inc.	NXT0623
Sun Microsystems Computer Corp.	SUN1065, SUN1442, SUN2031, SUN2727, SUN2930, SUN3272, SUN3402, SUN5684, SUN5782, SUN5970, SUN6602, SUN7188, SUN7793	Pyramid Technology Corp.	PYR1271, PYR3067, PYR3233, PYR4970, PYR9863
SunSoft, Inc.	SUN0617, SUN2241, SUN3129, SUN3403, SUN4529, SUN5382, SUN6635, SUN6859, SUN8720, SUN9763	RDI	SUN3402
Unisys Corporation	UNI0505, UNI1798, UNI3690, UNI5711, UNI9063, UNI9080	Sequent Computer Systems Inc.	SEC8754
Univel	UNV0528, UNV2014, UNV3055, UNV3978, UNV9180	Silicon Graphics, Inc.	SGI5507, SGI9297
UNIX System Laboratories	USL2115, USL3610, USL6259	Sun Microsystems Corp.,	SUN0617, SUN1442, SUN2031, SUN2241, SUN2727, SUN2930, SUN3129, SUN3272, SUN4529, SUN5382, SUN5684, SUN5782, SUN5970, SUN6602, SUN6635, SUN7188, SUN7793, SUN8720, SUN9763
		Unisys Corporation	SCO9875, UNI0505, UNI1798, UNI3690, UNI5711, UNI9063, UNI9080, UNV0528, UNV2014, UNV3978
		Zenith Data Systems	SCO3832, SCO5199

NIST POSIX VALIDATED PRODUCTS, *Continued*

Reference File #: AMD5598

Product Supplier: Amdahl Corporation
Product Tested: UTS System Version: 4 Release: 1
System Supplier: Amdahl Corporation
System Hardware: 5995M Model: 4550
C Compiler: Amdahl C Version: 1.5 Release: June, 1993
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 07/23/93

Reference File #: APP2482

Product Supplier: Apple Computer Inc.
Product Tested: A/UX Version: 2.0.1 Release: 01/30/1991
System Supplier: Apple Computer Inc.
System Hardware: Macintosh Model: IIfx
C Compiler: A/UX native C compiler (cc) Ver: 1.21 Rel: 1/13/1991
PCTS: 151-1 Version: 1.1 - 04/26/91
APTL: 0342 Mindcraft, Inc. Date Issued: 05/24/91

Reference File #: APP3355

Product Supplier: Apple Computer Inc.
Product Tested: A/UX Version: 3.0 Release: March 9, 1992
System Supplier: Apple Computer Inc.
System Hardware: Macintosh Model: Quadra 700
C Compiler: A/UX native C compiler (cc) Ver: 1.23 Rel: Feb 9, 1992
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0342 Mindcraft, Inc. Date Issued: 04/16/92

Reference File #: APP7204

Product Supplier: Apple Computer Inc.
Product Tested: A/UX Version: 3.0.1 Release: April 23, 1993
System Supplier: Apple Computer Inc.
System Hardware: Workgroup Server Model: 80
C Compiler: A/UX Developer's Tools (c89) Ver: 1.1 Rel: Apr 1, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 06/24/93

Reference File #: APP7224

Product Supplier: Apple Computer Inc.
Product Tested: A/UX Version: 3.0 Release: March 9, 1992
System Supplier: Apple Computer Inc.
System Hardware: Macintosh Model: Quadra 950
C Compiler: A/UX native C compiler (cc) Ver: 1.23 Rel: Feb 9, 1992
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0342 Mindcraft, Inc. Date Issued: 05/14/92

Reference File #: APP7235

Product Supplier: Apple Computer Inc.
Product Tested: A/UX Version: 2.0.1 Release: 01/30/1991
Supplier: Apple Computer Inc. Hardware: Macintosh Model: IIsi
C Compiler: A/UX native C compiler (cc) Ver: 1.21 Rel: 01/13/1991
PCTS: 151-1 Version: 1.1 - 04/26/91
APTL: 0342 Mindcraft, Inc. Date Issued: 05/24/91

Reference File #: APP8616

Product Supplier: Apple Computer Inc.
Product Tested: A/UX Version: 2.0.1 Release: 01/30/1991
Supplier: Apple Computer Inc. Hardware: Macintosh Model: IIsi
C Compiler: A/UX native C compiler (cc) Ver: 1.21 Rel: 01/13/1991
PCTS: 151-1 Version: 1.1 - 04/26/91
APTL: 0342 Mindcraft, Inc. Date Issued: 05/24/91

Reference File #: APP9125

Product Supplier: Apple Computer Inc.
Product Tested: A/UX Version: 3.0 Release: March 9, 1992
System Supplier: Apple Computer Inc.
System Hardware: Macintosh Model: Quadra 700
C Compiler: A/UX Developer's Tools (c89) Ver: 1.1 Rel: April 1, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 08/11/92

Reference File #: APP9165

Product Supplier: Apple Computer Inc.
Product Tested: A/UX Version: 3.0 Release: March 9, 1992
System Supplier: Apple Computer Inc.
System Hardware: Macintosh Model: Quadra 950
C Compiler: A/UX Developer's Tools (c89) Ver: 1.1 Rel: Apr 1, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 08/11/92

Reference File #: ATT1566

Product Supplier: AT&T
Product Tested: AT&T UNIX System V Ver: Release 4 Rel: 4.0.3
System Supplier: AT&T
System Hardware: AT&T 3B2 R3 Series Model: 3B2/600 GR
C Compiler: AT&T 3B2/RISC C Development System Version: 1.0
PCTS: 151-1 Version: 1.1 - 09/11/91
APTL: 0343 DataFocus Incorporated Date Issued: 11/06/91

Reference File #: BUL2387

Product Supplier: BULL S.A.
Product Tested: BOS Version: 2 Release: 1
System Supplier: BULL S.A.
System Hardware: DPX/2 Model: 200
C Compiler: C Compiler Version: 72 Release: 1
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0373 BULL S.A./Laboratoire POSIX Date Issued: 2/24/93

Reference File #: BUL6051

Product Supplier: BULL S.A.
Product Tested: BOS/X Version: 3 Release: 2
System Supplier: BULL S.A.
System Hardware: DPX/20 Model: 620
C Compiler: BOS/X XLC C Compiler Version: 1 Release: 02
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0373 BULL S.A./Laboratoire POSIX Date Issued: 1/22/93

Reference File #: CDC1101

Product Supplier: Control Data Corporation
Product Tested: EP/IX Version: 1.4.2 Release: November 27, 1991
System Supplier: Control Data Corporation
System Hardware: Control Data 4000 Model: 4680MP
C Compiler: EP/IX C Language RISCCompiler V: C 2.11 Rel: July 1990
PCTS: 151-1 Version: 1.1 - 09/11/91
APTL: 0356 Applications Software Incorporated Date Issued: 1/29/92

Reference File #: CDC5574

Product Supplier: Control Data Corporation
Product Tested: EP/IX Version: 1.3.1 Release: 03/21/1991
System Supplier: Control Data Corporation
System Hardware: Control Data 4000 Model: 4330-250
C Compiler: EP/IX C Language RISCCompiler Version: 2.11 Release: July 1990
PCTS: 151-1 Version: 1.1 - 04/26/91
APTL: 0356 Applications Software Incorporated Date issued: 05/24/91

Reference File #: CDC5750

Product Supplier: Control Data Corporation
Product Tested: EP/IX Version: 1.3.1 Release: 03/21/1991
System Supplier: Control Data Corporation
System Hardware: Control Data 4000 Model: 4680
C Compiler: EP/IX C Language RISCCompiler Version: 2.11 Release: 07/16/1990
PCTS: 151-1 Version: 1.1 - 04/26/91
APTL: 0356 Applications Software Incorporated Date issued: 05/24/91

NIST POSIX VALIDATED PRODUCTS, *Continued*

Reference File #: CON0202

Product Supplier: CONVEX Computer Corporation
Product Tested: ConvexOS Version: 10.1 Release: C200 Series
System Supplier: CONVEX Computer Corporation
System Hardware: C2 Model: C220
C Compiler: CONVEX C Version: 4.3.2
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0343 DataFocus Incorporated Date Issued: 05/11/92

Reference File #: CON2551

Product Supplier: CONVEX Computer Corporation
Product Tested: ConvexOS Version: 10.1 Release: C3800 Series
System Supplier: CONVEX Computer Corporation
System Hardware: C38 Model: C3810
C Compiler: CONVEX C Version: 4.3.2
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0343 DataFocus Incorporated Date Issued: 05/11/92

Reference File #: CON6027

Product Supplier: CONVEX Computer Corporation
Product Tested: ConvexOS Version: 10.1 Release: C3400 Series
System Supplier: CONVEX Computer Corporation
System Hardware: C34 Model: C3440
C Compiler: CONVEX C Version: 4.3.2
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0343 DataFocus Incorporated Date Issued: 05/11/92

Reference File #: CRA2641

Product Supplier: Cray Research, Inc.
Product Tested: UNICOS Version: 7.0.5.bu Release: 7.0
System Supplier: Cray Research, Inc.
System Hardware: Cray Y-MP Model: YMP2E/232-4
C Compiler: Cray Standard C Compiler Release: 3.0.5 (5/20/93)
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus Incorporated Date Issued: 10/14/93

Reference File #: DEC0319

Product Supplier: Digital Equipment Corporation
Product Tested: DEC OSF/1 Version: 1.2 Release: March 1993
System Supplier: Digital Equipment Corporation
System Hardware: DEC/3000 Model: 500
C Compiler: DEC OSF/1 for AXP C Compiler Version: 1 Release:
March 1993
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 03/10/93

Reference File #: DEC0638

Product Supplier: Digital Equipment Corporation
Product Tested: VMS Version: 5 Release: 5 (with VMS POSIX,
version 1.0)
System Supplier: Digital Equipment Corporation
System Hardware: VAXstation Model: 3100 M76
C Compiler: VAX C Version: 3 Release: 2
PCTS: 151-1 Version: 1.1 - 09/11/91
APTL: 0343 DataFocus Incorporated Date Issued: 01/29/92

Reference File #: DEC4670

Product Supplier: Digital Equipment Corporation
Product Tested: The ULTRIX Operating System Version: 4.3A
Release: July 1993
System Supplier: Digital Equipment Corporation
System Hardware: DECstation Model: 5000/150
C Compiler: Mips C Compiler Version: 3.0
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 06/24/93

Reference File #: DEC5794

Product Supplier: Digital Equipment Corporation
Product Tested: ULTRIX Version: 4.2 Release: May 31, 1991
System Supplier: Digital Equipment Corporation
System Hardware: VAXstation II Model: GPX
C Compiler: pcc Version: 4.2
PCTS: 151-1 Version: 1.1 - 04/26/91
APTL: 0342 Mindcraft, Inc. Date Issued: 06/17/91

Reference File #: DEC7386

Product Supplier: Digital Equipment Corporation
Product Tested: The ULTRIX Operating System Version: 4.3
Release: August 1992
System Supplier: Digital Equipment Corporation
System Hardware: DECstation Model: 5000/200
C Compiler: Mips C Compiler Version: 2.10
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 09/18/92

Reference File #: DEC7833

Product Supplier: Digital Equipment Corporation
Product Tested: OpenVMS VAX Version: 6 Release: 0 (with
OpenVMS VAX POSIX, Version
X1.2-35E)
System Supplier: Digital Equipment Corporation
System Hardware: VAXstation Model: 3100 M76
C Compiler: VAX C Version: 3 Release: 2
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus Incorporated Date Issued: 10/14/93

Reference File #: DEC7917

Product Supplier: Digital Equipment Corporation
Product Tested: the ULTRIX Operating System Version: 4.2A
Release: November 18, 1991
System Supplier: Digital Equipment Corporation
System Hardware: DECstation Model: 3100
C Compiler: MIPS C Compiler Version: 2.10
PCTS: 151-1 Version: 1.1 - 09/11/91
APTL: 0342 Mindcraft, Inc. Date Issued: 12/06/91

Reference File #: DEC8003

Product Supplier: Digital Equipment Corporation
Product Tested: The ULTRIX Operating System Version: 4.3A
Release: July 1993
System Supplier: Digital Equipment Corporation
System Hardware: DECstation Model: 5000/260
C Compiler: Mips C Compiler Version: 3.0
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 06/24/93

Reference File #: DEC9418

Product Supplier: Digital Equipment Corporation
Product Tested: ULTRIX Version: 4.2 Release: May 31, 1991
System Supplier: Digital Equipment Corporation
System Hardware: DECstation Model: 3100
C Compiler: MIPS C Compiler Version: 2.10
PCTS: 151-1 Version: 1.1 - 04/26/91
APTL: 0342 Mindcraft, Inc. Date Issued: 06/17/91

Reference File #: DEC9672

Product Supplier: Digital Equipment Corporation
Product Tested: The ULTRIX Operating System Version: 4.2A
Release: December 1991
System Supplier: Digital Equipment Corporation
System Hardware: DECstation Model: 5000/200
C Compiler: MIPS C Compiler Version: 2.10
PCTS: 151-1 Version: 1.1 - 09/11/91
APTL: 0342 Mindcraft, Inc. Date Issued: 02/12/92

NIST POSIX VALIDATED PRODUCTS, *Continued*

Reference File #: DGC2542

Product Supplier: Data General Corporation
Product Tested: DG/UX Version: 5.4
System Supplier: Data General Corporation
System Hardware: AViiON 5000 Model: AV/5240
C Compiler: GNU C Compiler for AViiON Systems Version: 1.37.23
PCTS: 151-1 Version: 1.1 - 07/01/91
APTL: 0342 Mindcraft, Inc. Date Issued: 09/10/91

Reference File #: DGC4767

Product Supplier: Data General Corporation
Product Tested: DG/UX Version: 5.4.2 Release: August 1992
System Supplier: Data General Corporation
System Hardware: AViiON AV/530/4600 Model: AV/532
C Compiler: GNU C Compiler for AViiON Systems Version: DG-2.2.3
Release: August 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 09/09/92

Reference File #: DGC8016

Product Supplier: Data General Corporation
Product Tested: DG/UX Version: 5.4
System Supplier: Data General Corporation
System Hardware: AViiON 400/4000 Model: AV/4100
C Compiler: GNU C Compiler for AViiON Systems Version: 1.37.23
PCTS: 151-1 Version: 1.1 - 07/01/91
APTL: 0342 Mindcraft, Inc. Date Issued: 09/10/91

Reference File #: DGC8703

Product Supplier: Data General Corporation
Product Tested: DG/UX Version: 5.4
System Supplier: Data General Corporation
System Hardware: AViiON 400/4000 Model: AV/412
C Compiler: GNU C Compiler for AViiON Systems Version: 1.37.23
PCTS: 151-1 Version: 1.1 - 07/01/91
APTL: 0342 Mindcraft, Inc. Date Issued: 09/10/91

Reference File #: DGC9391

Product Supplier: Data General Corporation
Product Tested: DG/UX Version: 4.32
System Supplier: Data General Corporation
System Hardware: AViiON AV/400/4000 Model: AV/410
C Compiler: GNU C Compiler for AViiON Sys Version: 1.37.23
PCTS: 151-1 Version: 1.1 - 04/26/91
APTL: 0342 Mindcraft, Inc. Date Issued: 05/24/91

Reference File #: DGC9574

Product Supplier: Data General Corporation
Product Tested: DG/UX Version: 5.4.2 Release: August 1992
System Supplier: Data General Corporation
System Hardware: AViiON AV/8000 Model: AV/6240
C Compiler: GNU C Compiler for AViiON Systems Version: DG-2.2.3
Release: August 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 11/03/92

Reference File #: ENC6897

Product Supplier: Encore Computer Corporation
Product Tested: UMAX V Release: 3.0.6
System Supplier: Encore Computer Corporation
System Hardware: 91 Series Model: 91-02427
C Compiler: Green Hills Software, Inc. C Release: 1.1
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0345 UniSoft Corporation Date Issued: 3/12/92

Reference File #: EVR0901

Product Supplier: ESIX/Everex Systems, Inc.
Product Tested: ESIX System V Release 4 Version: 4 Release: 4.0
System Supplier: AGI Computer, Inc.
System Hardware: AGI Model: 486/33
C Compiler: ESIX ANSI C Compiler Version: 5.0
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0343 DataFocus Incorporated Date Issued: 05/28/92

Reference File #: EVR9749

Product Supplier: ESIX/Everex Systems, Inc.
Product Tested: ESIX System V Release 4 Version: 4 Release: 4.0
System Supplier: ESIX/Everex Systems, Inc.
System Hardware: Everex Model: 3000S 386/33
C Compiler: ESIX ANSI C Compiler Version: 5.0
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0343 DataFocus Incorporated Date Issued: 05/28/92

Reference File #: HAR5240

Product Supplier: Harris Corporation
Product Tested: CX/UX Release: 5.3
System Supplier: Harris Corporation, Computer Systems Division
System Hardware: Night Hawk Model: HN4802
C Compiler: Harris C Compiler Release: 5.3
PCTS: 151-1 Version: 1.1 - 09/11/91
APTL: 0342 Mindcraft, Inc. Date Issued: 12/16/91

Reference File #: HPC0115

Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 8.02 Release: 10/06/91
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 800 Model: 867S
C Compiler: HP C Compiler Version: A 08.71 Release: 10/06/91
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 12/08/92

Reference File #: HPC0303

Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 8.02 Release: 10/06/91
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 800 Model: 867s
C Compiler: HP C Compiler Version: A 08.17 Release: 10/06/91
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0346 Hewlett-Packard POSIX Conformance Test Center Date Issued: 09/09/92

Reference File #: HPC0535

Product Supplier: Hewlett-Packard Company
Product Tested: Domain/OS Version: 10.4 Release: April 1992
System Supplier: Hewlett-Packard Company
System Hardware: Domain Series 4000 Model: DN4500
C Compiler: Domain/C Version: 6.9.M/MPX Release: May 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0346 Hewlett-Packard POSIX Conformance Test Center Date Issued: 09/2/92

Reference File #: HPC0603

Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 9.01 Release: January 4, 1993
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 700 Model: 735
C Compiler: HP C Compiler Version: HP92453-01 A.09.19 Release: December, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 2/19/93

NIST POSIX VALIDATED PRODUCTS, *Continued*

Reference File #: HPC1581

Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 8.02 Release: 10/06/91
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 800 Model: 827S
C Compiler: HP C Compiler Version: A 08.71 Release: 10/06/91
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 12/08/92

Reference File #: HPC1992

Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 8.08 Release: 11/23/92
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 800 Model: 827S
C Compiler: HP C Compiler Version: A 08.71 Release: 10/06/91
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 12/08/92

Reference File #: HPC2540

Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 8.07 Release: December 1991
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 700 Model: 720
C Compiler: HP C Compiler Version: A 08.71 Release: Dec 1991
PCTS: 151-1 Version: 1.1 - 09/11/91
APTL: 0346 Hewlett-Packard POSIX Conformance Test Center Date Issued: 01/29/92

Reference File #: HPC2698

Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 8.02 Release: 10/06/91
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 800 Model: 817S
C Compiler: HP C Compiler Version: A 08.71 Release: 10/06/91
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 12/08/92

Reference File #: HPC2952

Product Supplier: Hewlett-Packard Company
Product Tested: Domain/OS Version: 10.4 Release: April 1992
System Supplier: Hewlett-Packard Company
System Hardware: Domain Series 400 Model: 433s
C Compiler: Domain/C Version: 6.9.M/MPX Release: May 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0346 Hewlett-Packard POSIX Conformance Test Center Date Issued: 09/2/92

Reference File #: HPC3574

Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 9.0 Release: October 7, 1992
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 400 Model: 433S
C Compiler: HP C Compiler Version: B2371B.08.00 Internal Revision 70.2 Release: October 7, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 2/19/93

Reference File #: HPC3760

Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 8.02 Release: 10/06/91
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 800 Model: 847S
C Compiler: HP C Compiler Version: A 08.71 Release: 10/06/91
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 12/08/92

Reference File #: HPC3897

Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 9.0 Release: October 7, 1992
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 800 Model: 847S
C Compiler: HP C Compiler Version: A 09.19 Release: Oct 7, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 1/07/93

Reference File #: HPC4246

Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 8.08 Release: 11/23/92
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 800 Model: 807S
C Compiler: HP C Compiler Version: A 08.71 Release: 10/06/91
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 12/08/92

Reference File #: HPC6304

Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 9.01 Release: January 4, 1993
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 700 Model: 720
C Compiler: HP C Compiler Ver: HP92453-01 A.09.19 Rel: Dec, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 2/19/93

Reference File #: HPC6391

Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 8.00 with PHCO_0800 (Patch) Release: January 1991, January 1992 (Patch)
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 400 Model: 400S
C Compiler: HP C Compiler Version: B 08.00 Release: Dec. 1991
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0346 Hewlett-Packard POSIX Conformance Test Center Date Issued: 04/17/92

Reference File #: HPC6637

Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 8.08 Release: 11/23/92
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 800 Model: 817S
C Compiler: HP C Compiler Version: A 08.71 Release: 10/06/91
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 12/08/92

Reference File #: HPC6906

Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 9.01 Release: January 4, 1993
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 700 Model: 715
C Compiler: HP C Compiler Ver: HP92453-01 A.09.19 Rel: Dec. 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 2/19/93

Reference File #: HPC7051

Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 8.08 Release: 11/23/92
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 800 Model: 867S
C Compiler: HP C Compiler Version: A 08.71 Release: 10/06/91
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 12/08/92

NIST POSIX VALIDATED PRODUCTS, *Continued*

Reference File #: HPC7716

Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 8.08 Release: 11/23/92
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 800 Model: 847S
C Compiler: HP C Compiler Version: A 08.71 Release: 10/06/91
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 12/08/92

Reference File #: HPC8098

Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 8.02 Release: 10/06/91
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 800 Model: 807S
C Compiler: HP C Compiler Version: A 08.71 Release: 10/06/91
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 12/08/92

Reference File #: HPC9185

Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 8 Release: 5/6/91
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 800 Model: 835
C Compiler: HP C Compiler Version: A 08.17 Release: 5/6/91
PCTS: 151-1 Version: 1.1 - 09/11/91
APTL: 0346 Hewlett-Packard POSIX Conformance Test Center Date Issued: 12/18/91

Reference File #: IBM0320

Product Supplier: International Business Machines Inc.
Product Tested: AIX Version 3 for RISC System/6000 Version: 3 Release: 2
System Supplier: International Business Machines Inc.
System Hardware: RISC System/6000 Model: 220
C Compiler: xlc Version: 1 Release: 2
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0342 Mindcraft, Inc. Date Issued: 02/25/92

Reference File #: IBM0458

Product Supplier: International Business Machines Inc.
Product Tested: AIX Version 3 for RISC System/6000 Version: 3 Release: 2
System Supplier: International Business Machines Inc.
System Hardware: RISC System/6000 Model: 530H
C Compiler: xlc Version: 1 Release: 2
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0342 Mindcraft, Inc. Date Issued: 02/25/92

Reference File #: IBM1344

Product Supplier: International Business Machines Inc.
Product Tested: AIX Version: 3 Release: 1
System Supplier: International Business Machines Inc.
System Hardware: RISC System/6000 Model: 320
C Compiler: xlc Version: 3 Release: 1
PCTS: 151-1 Version: 1.1 - 04/26/91
APTL: 0342 Mindcraft, Inc. Date Issued: 05/24/91

Reference File #: IBM2592

Product Supplier: International Business Machines Inc.
Product Tested: AIX Version: 3 Release: 1
System Supplier: International Business Machines Inc.
System Hardware: RISC System/6000 Model: 530
C Compiler: xlc Version: 3 Release: 1
PCTS: 151-1 Version: 1.1 - 04/26/91
APTL: 0342 Mindcraft, Inc. Date Issued: 05/24/91

Reference File #: IBM3697

Product Supplier: International Business Machines Inc.
Product Tested: AIX Version 3 for RISC System/6000 Version: 3 Release: 2
System Supplier: International Business Machines Inc.
System Hardware: RISC System/6000 Model: 320
C Compiler: xlc Version: 1 Release: 2
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0342 Mindcraft, Inc. Date Issued: 02/25/92

Reference File #: INT4675

Product Supplier: Intergraph Corporation
Product Tested: CLIX Version: 06.02.01 Release: 3.1
System Supplier: Intergraph Corporation
System Hardware: Intergraph 6400 Series Workstation Model: 6450
C Compiler: CLIPPER Advanced Optimizing C Compiler Version: 06.00.01.43 Release: 28-JAN-1992
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0343 DataFocus Incorporated Date Issued: 05/28/92

Reference File #: INT5154

Product Supplier: Interactive Systems Corp.
Product Tested: Interactive UNIX Operating System Version: 3.0 Release: 3.2
System Supplier: Compaq Computer Corporation
System Hardware: Compaq Model: System Pro
C Compiler: Interactive UNIX Software Development System Ver: 3.0
PCTS: 151-1 Version: 1.1 - 09/11/91
APTL: 0345 UniSoft Corporation Date Issued: 10/16/91

Reference File #: LNX3076

Product Supplier: Lynx Real-Time Systems, Inc.
Product Tested: LynxOS Version: 2 Release: 2.2.0
System Supplier: Compaq Computer Corporation
System Hardware: ProLinea Model: 4/33
C Compiler: gcc Version: 1.42 Release: September 19, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 10/14/93

Reference File #: MOD4817

Product Supplier: Modular Computer Systems, Inc.
Product Tested: REAL/IX Version: V.3 Release: D.0
System Supplier: Modular Computer Systems, Inc.
System Hardware: REAL/STAR Model: 1000
C Compiler: GNU C Compiler for REAL/IX Systems Version: 1.37
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0342 Mindcraft, Inc. Date Issued: 05/05/92

Reference File #: MOT1086

Product Supplier: Motorola Computer Group
Product Tested: UNIX[®] System V/88 Release 4.0 Version: 3 Release: 4.0
System Supplier: Motorola Computer Group
System Hardware: Motorola Series 8000 Model: 8x40
C Compiler: Software Development System Version: T302.0 Release: 12/2/92
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus, Inc. Date Issued: 2/19/93

Reference File #: MOT5618

Product Supplier: Motorola Computer Group
Product Tested: UNIX[®] System V/88 Release 4.0 Version: 3 Release: 4.0
System Supplier: Motorola Computer Group
System Hardware: Motorola Series 8000 Model: 8x20
C Compiler: Software Development System Ver: T302.0 Rel: 12/2/92
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus, Inc. Date Issued: 2/19/93

NIST POSIX VALIDATED PRODUCTS, *Continued*

Reference File #: NCR0554

Product Supplier: NCR Corporation
Product Tested: NCR UNIX System V Ver: Release 4 Rel: 4.0.4
System Supplier: NCR Corporation
System Hardware: NCR 3B2 R3 Series Model: 3B2/1000 R3
(Military ID: 3B2/600 GR)
C Compiler: 3B2/RISC C Development System Release: 1.1
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus, Inc. Date Issued: 12/09/92

Reference File #: NCR1448

Product Supplier: NCR Corporation
Product Tested: NCR UNIX System V Release 4 MP-RAS, Rel 2
Version: SVR4 Release: 2
System Supplier: NCR Corporation
System Hardware: System 3000 Model: 3455
C Compiler: NCR C Development Toolkit Release: 2
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus, Inc. Date Issued: 10/08/93

Reference File #: NCR2047

Product Supplier: NCR Corporation
Product Tested: NCR System V Release 4 MP-RAS, Rel 2 Version:
SVR4 Release: 2
System Supplier: NCR Corporation
System Hardware: System 3000 Model: 3447
C Compiler: NCR C Development Toolkit Release: 2
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0343 DataFocus, Inc. Date Issued: 06/26/92

Reference File #: NCR2805

Product Supplier: NCR Corporation
Product Tested: NCR System V Release 4 MP-RAS, Rel 2 Version:
SVR4 Release: 2
System Supplier: NCR Corporation
System Hardware: System 3000 Model: 3450
C Compiler: NCR C Development Toolkit Release: 2
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0343 DataFocus, Inc. Date Issued: 06/26/92

Reference File #: NCR3061

Product Supplier: NCR Corporation
Product Tested: NCR UNIX System V Release 4 MP-RAS, Rel 2
Version: SVR4 Release: 2
System Supplier: NCR Corporation
System Hardware: System 3000 Model: 3555
C Compiler: NCR C Development Toolkit Release: 2
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus, Inc. Date Issued: 10/08/93

Reference File #: NCR3331

Product Supplier: NCR Corporation
Product Tested: NCR System V Release 4 MP-RAS, Rel 2 Version:
SVR4 Release: 2
System Supplier: NCR Corporation
System Hardware: System 3000 Model: 3345
C Compiler: NCR C Development Toolkit Release: 2
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0343 DataFocus, Inc. Date Issued: 06/26/92

Reference File #: NCR4518

Product Supplier: NCR Corporation
Product Tested: NCR System V Release 4 MP-RAS, Rel 2 Version:
SVR4 Release: 2
System Supplier: NCR Corporation
System Hardware: System 3000 Model: 3550
C Compiler: NCR C Development Toolkit Release: 2
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0343 DataFocus, Inc. Date Issued: 06/26/92

Reference File #: NCR5533

Product Supplier: NCR Corporation
Product Tested: NCR UNIX System V Release 4 MP-RAS, Rel 2
Version: SVR4 Release: 2
System Supplier: NCR Corporation
System Hardware: System 3000 Model: 3520
C Compiler: NCR C Development Toolkit Release: 2
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus, Inc. Date Issued: 10/08/93

Reference File #: NCR7380

Product Supplier: NCR Corporation
Product Tested: UNIX® System V Release 4.0 Version 3.1
Version: 3.1 Release: 4.0
System Supplier: NCR Corporation
System Hardware: StarServer E Model: Release 3
C Compiler: Optimized C Compiler Version: 5.0
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus, Inc. Date Issued: 03/10/93

Reference File #: NCR7549

Product Supplier: NCR Corporation
Product Tested: NCR UNIX System V Release 4 MP-RAS, Rel 2
Version: SVR4 Release: 2
System Supplier: NCR Corporation
System Hardware: System 3000 Model: 3525
C Compiler: NCR C Development Toolkit Release: 2
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus, Inc. Date Issued: 10/08/93

Reference File #: NXT0623

Product Supplier: NeXT Computer, Inc.
Product Tested: NEXTSTEP Version: 3.2 Release: November 5,
1993 (with POSIX for NEXTSTEP version 1.0)
System Supplier: NeXT Computer, Inc.
System Hardware: NeXTstation Model: Color Turbo
C Compiler: NEXTSTEP DEVELOPER Version: 3.2 Release:
November 5, 1993
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 10/08/93

Reference File #: PYR1271

Product Supplier: Pyramid Technology Corporation
Product Tested: OSx Version: 5.1a-92a023 Release: 0422s
System Supplier: Pyramid Technology Corporation
System Hardware: MIServer Model: MIS-2T
C Compiler: att_cc Version: 5.1
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0343 DataFocus Incorporated Date Issued: 05/28/92

Reference File #: PYR3067

Product Supplier: Pyramid Technology Corporation
Product Tested: DataCenter/OSx Version: dcosx Release: 1.1-
92c027
System Supplier: Pyramid Technology Corporation
System Hardware: MIServer Model: 2S
C Compiler: DataCenter/OSx C Compiler Release: 1.1-92c027
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus Incorporated Date Issued: 09/09/92

Reference File #: PYR3233

Product Supplier: Pyramid Technology Corporation
Product Tested: DataCenter/OSx Version: dcosx Release: 1.1-
92c027
System Supplier: Pyramid Technology Corporation
System Hardware: MIServer Model: 12S
C Compiler: DataCenter/OSx C Compiler Release: 1.1-92c027
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus Incorporated Date Issued: 10/05/92

NIST POSIX VALIDATED PRODUCTS, *Continued*

Reference File #: PYR4970

Product Supplier: Pyramid Technology Corporation
Product Tested: DataCenter/OSx Version: dcosex Rel: 1.1-92c027
System Supplier: Pyramid Technology Corporation
System Hardware: MIServer Model: 4S
C Compiler: DataCenter/OSx C Compiler Release: 1.1-92c027
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus Incorporated Date Issued: 09/09/92

Reference File #: PYR9863

Product Supplier: Pyramid Technology Corporation
Product Tested: OSx Version: 5.1a Release: 0318t
System Supplier: Pyramid Technology Corporation
System Hardware: MIServer Model: MIS-4T
C Compiler: att_cc Version: 5.1
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0343 DataFocus Incorporated Date Issued: 05/28/92

Reference File #: SCO3664

Product Supplier: Santa Cruz Operation Inc.
Product Tested: SCO Open Desktop Version: 2.0
System Supplier: Diamond Flower Incorporated
System Hardware: DFI Model: 486SX/25
C Compiler: Microsoft C Version: 5.1
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus Incorporated Date Issued: 11/02/92

Reference File #: SCO3832

Product Supplier: Santa Cruz Operation Inc.
Product Tested: SCO UNIX System V/386 Version: Release 3.2
System Supplier: Zenith Data Systems
System Hardware: Z Station Model: 433DEh
C Compiler: Microsoft C Version: 5.1
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus Incorporated Date Issued: 09/28/92

Reference File #: SCO4102

Product Supplier: Santa Cruz Operation, Inc.
Product Tested: SCO UNIX System V/386 Version: Release 3.2
System Supplier: AST Research, Inc.
System Hardware: Premium Series Model: 486/33
C Compiler: Microsoft C Version: 5.1
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus, Inc. Date Issued: 07/01/92

Reference File #: SCO5199

Product Supplier: Santa Cruz Operation Inc.
Product Tested: SCO UNIX System V/386 Version: 3.2
System Supplier: Zenith Data Systems
System Hardware: Zenith Data Systems Supersport Laptop Model: Supersport SX
C Compiler: Microsoft C Version: 5.1
PCTS: 151-1 Version: 1.1 - 07/01/91
APTL: 0343 DataFocus Incorporated Date Issued: 09/17/91

Reference File #: SCO6748

Product Supplier: Santa Cruz Operation Inc.
Product Tested: SCO UNIX System V/386 Version: 3.2 Release: 2
System Supplier: Data General Corporation
System Hardware: Walkabout/SX Model: G2763
C Compiler: Microsoft C Optimizing Compiler Version: 5.1
PCTS: 151-1 Version: 1.1 - 07/01/91
APTL: 0342 Mindcraft, Inc. Date Issued: 09/10/91

Reference File #: SCO8054

Product Supplier: Santa Cruz Operation Inc.
Product Tested: SCO Open Desktop Version: 2.0
System Supplier: Diamond Flower Incorporated
System Hardware: DFI Model: 486/33
C Compiler: Microsoft C Version: 5.1
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus Incorporated Date Issued: 11/02/92

Reference File #: SCO9875

Product Supplier: Santa Cruz Operation Inc.
Product Tested: SCO UNIX System V/386 Version: 3.2
System Supplier: UNISYS Corporation
System Hardware: PW² Advantage 3000 Series Model: 3256
C Compiler: Microsoft C Version: 5.1
PCTS: 151-1 Version: 1.1 - 09/11/91
APTL: 0343 DataFocus Incorporated Date Issued: 11/01/91

Reference File #: SEC8754

Product Supplier: Sequent Computer Systems Inc.
Product Tested: DYNIX/ptx Operating System Version: 1.3.0
System Supplier: Sequent Computer Systems Inc.
System Hardware: Symmetry Series II Model: S27
C Compiler: C Tools Version: 1.12p
PCTS: 151-1 Version: 1.1 - 09/11/91
APTL: 0345 UniSoft Corporation Date Issued: 12/09/91

Reference File #: SGI5507

Product Supplier: Silicon Graphics, Inc.
Product Tested: IRIX Version: 4.0.5
System Supplier: Silicon Graphics, Inc.
System Hardware: IRIS Model: Crimson
C Compiler: IRIS Development Option Version: 2.20
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0342 Mindcraft, Inc. Date Issued: 06/15/92

Reference File #: SGI9297

Product Supplier: Silicon Graphics, Inc.
Product Tested: IRIX Version: 4.0.5
System Supplier: Silicon Graphics, Inc.
System Hardware: IRIS Model: Indigo
C Compiler: IRIS Development Option Version: 2.20
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0342 Mindcraft, Inc. Date Issued: 06/15/92

Reference File #: SUN0617

Product Supplier: SunSoft, Inc.
Product Tested: Solaris Version: 1.0.1 Release: PC
System Supplier: Sun Microsystems Computer Corporation, Inc.
System Hardware: SPARCstation IPC Model: GX
C Compiler: Solaris C Compiler Version: 1.0.1 Release: Dec 4, 1991
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus Incorporated Date Issued: 08/27/92

Reference File #: SUN1065

Product Supplier: Sun Microsystems Computer Corporation, Inc.
Product Tested: Solaris 2.1 for x86 Version: 2.1 Release: May 1993
System Supplier: Dell Computer Corporation
System Hardware: 450 Model: DE
C Compiler: ProCompiler C Version: 2.0.1 for x86 Rel: May 1993
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 05/20/93

NIST POSIX VALIDATED PRODUCTS, *Continued*

Reference File #: SUN1442

Product Supplier: Sun Microsystems Computer Corporation, Inc.
Product Tested: Solaris Version: 2.2 Release: May 28, 1993
System Supplier: Sun Microsystems Computer Corporation, Inc.
System Hardware: SPARCstation LX Model: 4/30
C Compiler: Sun C Compiler Version: 2.0.1 Release: Oct. 3, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 05/28/93

Reference File #: SUN2031

Product Supplier: Sun Microsystems Computer Corporation, Inc.
Product Tested: Solaris Version: 2.1 Release: August 4, 1992
System Supplier: Sun Microsystems Computer Corporation, Inc.
System Hardware: SunWorkstation 4/30 Model: 4/30
C Compiler: Sun C Compiler Version: 2.0 Release: June 30, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 10/08/92

Reference File #: SUN2241

Product Supplier: SunSoft, Inc.
Product Tested: Solaris Version: 2.0 Release: June 1992
System Supplier: Sun Microsystems Computer Corporation, Inc.
System Hardware: SPARCstation 2 Model: 4/75
C Compiler: Sun C Compiler Version: 2.0 Release: 20 May 1992
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0342 Mindcraft, Inc. Date Issued: 07/02/92

Reference File #: SUN2727

Product Supplier: Sun Microsystems Computer Corporation, Inc.
Product Tested: Solaris Version: 2.1 Release: December 7, 1992
System Supplier: Sun Microsystems Computer Corporation, Inc.
System Hardware: SPARCserver 10 Model: 42
C Compiler: Sun C Compiler Version: 2.0.1 Release: Oct. 3, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 1/07/93

Reference File #: SUN2930

Product Supplier: Sun Microsystems Computer Corporation, Inc.
Product Tested: Solaris Version: 2.2 Release: May 28, 1993
System Supplier: Sun Microsystems Computer Corporation, Inc.
System Hardware: SPARCstation 2 Model: 4/75
C Compiler: Sun C Compiler Version: 2.0.1 Release: Oct. 3, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 05/28/93

Reference File #: SUN3129

Product Supplier: SunSoft, Inc.
Product Tested: Interactive Unix Operating System V/386 Version:
3.0.1 Release: 3.2
System Supplier: Compaq Computer Corporation
System Hardware: Desk Pro Model: 386/20E
C Compiler: Interactive Unix Software Development System Version:
3.0 Release: December 4, 1991
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0345 UniSoft Corporation Date Issued: 9/18/92

Reference File #: SUN3272

Product Supplier: Sun Microsystems Computer Corporation, Inc.
Product Tested: Solaris Version: 2.2 Release: May 28, 1993
System Supplier: Sun Microsystems Computer Corporation, Inc.
System Hardware: SPARCcenter 10 Model: 54
C Compiler: Sun C Compiler Version: 2.0.1 Release: Oct. 3, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 05/28/93

Reference File #: SUN3402

Product Supplier: Sun Microsystems Computer Corporation, Inc.
Product Tested: Solaris Version: 2.1 Release: August 4, 1992
System Supplier: RDI
System Hardware: BriteLite Model: IPX Color Laptop Workstation
C Compiler: Sun C Compiler Version: 2.0 Release: June 30, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 10/16/92

Reference File #: SUN3403

Product Supplier: SunSoft, Inc.
Product Tested: Interactive Unix Operating System V/386 Version:
3.0.1 Release: 3.2
System Supplier: Alpha Systems Lab
System Hardware: ASL486/33 Model: ASL433
C Compiler: Interactive Unix Software Development System Version:
3.0
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0345 UniSoft Corporation Date Issued: 10/05/92

Reference File #: SUN4529

Product Supplier: SunSoft, Inc.
Product Tested: Solaris Version: 1.1 Version C Release: August
13, 1993
System Supplier: Sun Microsystems Computer Corporation, Inc.
System Hardware: SPARCclassic Model: 4/15
C Compiler: Solaris C Compiler Version: 1.1 Release: August 13,
1993
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 10/14/93

Reference File #: SUN5382

Product Supplier: SunSoft, Inc.
Product Tested: Solaris Version: 1.0.1 Release: PC
System Supplier: Sun Microsystems Computer Corporation, Inc.
System Hardware: SPARCstation IPX Model: GX
C Compiler: Solaris C Compiler Version: 1.0.1 Release: December 4,
1991
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus Incorporated Date Issued: 09/02/92

Reference File #: SUN5684

Product Supplier: Sun Microsystems Computer Corporation, Inc.
Product Tested: Solaris Version: 2.1 Release: December 7, 1992
System Supplier: Sun Microsystems Computer Corporation, Inc.
System Hardware: SPARCclassic Model: 4/15
C Compiler: Sun C Compiler Version: 2.0.1 Release: October 3, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 1/07/93

Reference File #: SUN5782

Product Supplier: Sun Microsystems Computer Corporation, Inc.
Product Tested: Solaris Version: 2.1 Release: August 4, 1992
System Supplier: Sun Microsystems Computer Corporation, Inc.
System Hardware: SPARCserver 10 Model: 30
C Compiler: Sun C Compiler Version: 2.0 Release: June 30, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 10/08/92

Reference File #: SUN5970

Product Supplier: Sun Microsystems Computer Corporation, Inc.
Product Tested: Solaris Version: 2.1 Release: August 4, 1992
System Supplier: Sun Microsystems Computer Corporation, Inc.
System Hardware: SPARCserver 10 Model: 41
C Compiler: Sun C Compiler Version: 2.0 Release: June 30, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 10/08/92

NIST POSIX VALIDATED PRODUCTS, *Continued*

Reference File #: SUN6602

Product Supplier: Sun Microsystems Computer Corporation, Inc.
Product Tested: Solaris Version: 2.2 Release: May 28, 1993
System Supplier: Sun Microsystems Computer Corporation, Inc.
System Hardware: SPARCcenter 2000 Model: 01
C Compiler: Sun C Compiler Version: 2.0.1 Release: October 3, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 05/28/93

Reference File #: SUN6635

Product Supplier: SunSoft, Inc.
Product Tested: Solaris Version: 1.0.1 Release: PC
System Supplier: Sun Microsystems Computer Corporation, Inc.
System Hardware: SPARCserver 690 Model: 140
C Compiler: Solaris C Compiler Ver 1.0.1 Release December 4, 1991
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0342 Mindcraft, Inc. Date Issued: 02/19/92

Reference File #: SUN6859

Product Supplier: SunSoft, Inc.
Product Tested: INTERACTIVE UNIX Operating System V/386
Version: 4.0 Release: 3.2
System Supplier: Compaq Computer Corporation
System Hardware: DeskPro Model: 66M
C Compiler: INTERACTIVE Software Development System Version: 4.0
Release: May 1993
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 07/15/93

Reference File #: SUN7188

Product Supplier: Sun Microsystems Computer Corporation, Inc.
Product Tested: Solaris Version: 1.1 Release: August 24, 1992
System Supplier: Sun Microsystems Computer Corporation, Inc.
System Hardware: SPARCstation 10 Model: GX-30
C Compiler: Solaris C Compiler Version: 1.1 Release: August 24, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 08/27/92

Reference File #: SUN7793

Product Supplier: Sun Microsystems Computer Corporation, Inc.
Product Tested: Solaris Version: 2.1 Release: August 4, 1992
System Supplier: Sun Microsystems Computer Corporation, Inc.
System Hardware: SPARCserver 10 Model: 42
C Compiler: Sun C Compiler Version: 2.0 Release: June 30, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 10/08/92

Reference File #: SUN8720

Product Supplier: SunSoft, Inc.
Product Tested: Solaris Version: 1.1 Version C Release: August 13, 1993
System Supplier: Sun Microsystems Computer Corporation, Inc.
System Hardware: SPARCstation Model: 4/30
C Compiler: Solaris C Compiler Version: 1.1 Release: Aug 13, 1993
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 10/14/93

Reference File #: SUN9763

Product Supplier: SunSoft, Inc.
Product Tested: Solaris Version: 1.0.1 Release: PC
System Supplier: Sun Microsystems Computer Corporation, Inc.
System Hardware: SPARCstation 2 Model: GX
C Compiler: Solaris C Compiler Version: 1.0.1 Release: Dec 4, 1991
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0342 Mindcraft, Inc. Date Issued: 02/19/92

Reference File #: UNI0505

Product Supplier: Unisys Corporation
Product Tested: UNIX System V Release 4 Version: Revision 1.0.2
System Supplier: Unisys Corporation
System Hardware: Unisys U 6000 Series Model: U 6000/15

C Compiler: UNIX System V Release 4 Standard C Development
Environment Version: 1.0.2
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0342 Mindcraft, Inc. Date Issued: 04/30/92

Reference File #: UNI1798

Product Supplier: Unisys Corporation
Product Tested: UNIX System V Release 4 Version: Revision 1.0.2
System Supplier: Unisys Corporation
System Hardware: Unisys U 6000 Series Model: U 6000/65

C Compiler: UNIX System V Release 4 Standard C Development
Environment Version: 1.0.2
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0342 Mindcraft, Inc. Date Issued: 05/12/92

Reference File #: UNI3690

Product Supplier: Unisys Corporation
Product Tested: UNIX System V Release 4 Version: 1.1 Release:
October 30, 1992
System Supplier: Unisys Corporation
System Hardware: Unisys U 6000 Series Model: U6000/65
C Compiler: UNIX System V Release 4 Standard C Development
Environment Version: 1.1
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 09/28/92

Reference File #: UNI5711

Product Supplier: Unisys Corporation
Product Tested: UNIX System V Release 4 Version: Revision 1.0.2
System Supplier: Unisys Corporation
System Hardware: Unisys U 6000 Series Model: U 6000/60

C Compiler: UNIX System V Release 4 Standard C Development
Environment Version: 1.0.2
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0342 Mindcraft, Inc. Date Issued: 05/12/92

Reference File #: UNI9063

Product Supplier: Unisys Corporation
Product Tested: UNIX System V Release 4 Version: Revision 1.0.2
System Supplier: Unisys Corporation
System Hardware: Unisys U 6000 Series Model: U 6000/35
C Compiler: UNIX System V Release 4 Standard C Development
Environment Version: 1.0.2
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0342 Mindcraft, Inc. Date Issued: 05/12/92

Reference File #: UNI9080

Product Supplier: Unisys Corporation
Product Tested: CTOS II Version: 3 Release: 3
System Supplier: Unisys Corporation
System Hardware: Unisys B-Series Model: NGEN
C Compiler: Microsoft C Version: 6.0
PCTS: 151-1 Version: 1.1 - 07/01/91
APTL: 0343 DataFocus Incorporated Date Issued: 09/17/91

NIST POSIX VALIDATED PRODUCTS, *Continued*

Reference File #: UNV0528

Product Supplier: Univel
Product Tested: UnixWare Version: 1.0 Release: June 1993
System Supplier: Unisys Corporation
System Hardware: Unisys U 6000/DT Series/PW² Advantage Plus
Series Model: U6000/DT1 (MPE 4332)
C Compiler: Optimizing C Compilation Sys Ver: 2.0 Rel: Nov 2, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 05/18/93

Reference File #: UNV2014

Product Supplier: Univel
Product Tested: UnixWare Version: 1.0 Release: June 1993
System Supplier: Unisys Corporation
System Hardware: Unisys U 6000/DT Series/PW² Advantage Plus
Series Model: U6000/DT2 (MPE 4663)
C Compiler: Optimizing C Compilation System Version: 2.0 Release:
Nov. 2, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 05/18/93

Reference File #: UNV3055

Product Supplier: Univel
Product Tested: UnixWare Application Server Version: 1.0
Release: October 1992
System Supplier: AST Research, Inc.
System Hardware: Premium 486/33 Model: 3V
C Compiler: UnixWare Software Development Kit Version: 1.0
Release: October 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 10/08/93

Reference File #: UNV3978

Product Supplier: Univel
Product Tested: UnixWare Version: 1.0 Release: June 1993
System Supplier: Unisys Corporation
System Hardware: Unisys PW² Advantage Series
Model: MPI 4336)
C Compiler: Optimizing C Compilation System Version: 2.0 Release:
Nov. 2, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 05/18/93

Reference File #: UNV9180

Product Supplier: Univel
Product Tested: UnixWare Personal Edition Version: 1.0 Release:
October 1992
System Supplier: AST Research, Inc.
System Hardware: Premium 486/33 Model: 3V
C Compiler: UnixWare Software Development Kit Version: 1.0
Release: October 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 10/08/93

Reference File #: USL2115

Product Supplier: UNIX System Laboratories, Inc.
Product Tested: UNIX System V Release 4 Version: 4 Release: 4.0
System Supplier: AST Research, Inc.
System Hardware: Premium Series Model: 486/33
C Compiler: Standard C Development Environment Version: 5.0
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus, Inc. Date Issued: 07/01/92

Reference File #: USL3610

Product Supplier: UNIX System Laboratories, Inc.
Product Tested: UNIX[®] System V Release 4 for the Intel386[™]
Architecture Version: 4
Release: July 1991
System Supplier: AT&T
System Hardware: AT&T 6386/25 WGS Model: CPU 311 PC3B
C Compiler: Standard C Development Environment Version: Issue 5
PCTS: 151-1 Version: 1.1 - 09/11/91
APTL: 0342 Mindcraft, Inc. Date Issued: 12/12/91

Reference File #: USL6259

Product Supplier: UNIX System Laboratories, Inc.
Product Tested: UNIX[®] System V/386 Release 4 Version: 4.0T
Release: August 1992, with PATCH #1 (Package Date: 11/20/92)
System Supplier: AST Research, Inc.
System Hardware: Premium 486/33 Model: 3V
C Compiler: UNIX System Laboratories Standard C Development
Environment Version: Issue 5
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 2/12/93

5.7 TESTING LABORATORIES AND VALIDATED PRODUCTS for NIST POSIX (FIPS 151-2)

September 14, 1995

ACCREDITED NIST POSIX TESTING LABORATORIES

The National Voluntary Laboratory Accreditation Program (NVLAP) has accredited the following laboratories to test computer operating system interfaces for conformance with the Federal Information Processing Standard 151-2 (FIPS 151-2) using the NIST POSIX Conformance Test Suite (NIST-PCTS:151-2). FIPS 151-2 replaced FIPS 151-1 in its entirety on October 15, 1993. Only accredited laboratories may submit test reports to NIST/CSL for validation.

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Mindcraft, Inc.
410 Cambridge Avenue
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Contact: Mr. Bruce Weiner
Phone: 415-323-9000
email: sales@mindcraft.com

PERENNIAL
4699 Old Ironsides Drive, Suite 210
Santa Clara, CA 95054

Contact: Mr. Barry E. Hedquist
Phone: 408-748-2900
email: info@peren.com

UNISYS System Certification
2476 Swedesford Road
Paoli, PA 19301

Contact: Mr. Carsten Gardan
Phone: 610-993-6157
email: carsten@osil.unisys.com

NIST POSIX VALIDATED PRODUCTS

The following products have been tested by an Accredited POSIX Testing Laboratory (APTL) using the official National Institute of Standards and Technology POSIX Conformance Test Suite (NIST-PCTS:151-2) for the Federal Information Processing Standards 151-2 (FIPS PUB 151-2). A Certificate of Validation has been issued by NIST/CSL. Additional information is available from NIST/CSL on conditional features supported, configuration details, and resolved test codes (if appropriate).

Information in this listing includes product information on the implementation, system tested and type of implementation. FIPS 151-2 supports three types of implementations, native, hosted, and cooperating. A native implementation "refers to an implementation of POSIX.1 that interfaces directly to an operating system kernel." A cooperating implementation "refers to an implementation of POSIX.1 that interfaces directly to an operating system kernel but the load modules are not produceable on this implementation." A hosted implementation "refers to an implementation of POSIX.1 that is accomplished through interfaces from the POSIX.1 services to some alternate form of operating system kernel services."

Information is also provided on the following primary conditional features: General Terminal Interface devices (GTI), Mountable File System (MFS), Modem Control (MC), and Appropriate Privileges (AP). If a Certificate of Validation has been corrected or amended there are two issue dates, the original date [in brackets] and the reissue date, listed for the product.

NIST POSIX VALIDATED PRODUCTS, *Continued*

PRODUCT SUPPLIERS

<u>PRODUCT SUPPLIERS</u>	<u>REFERENCE FILE #</u>
Amdahl Corporation	151-2AMD001
AT&T Global Information Solutions	151-2ATT001, 151-2ATT002, 151-2ATT003, 151-2ATT004, 151-2ATT005
BULL S.A.	151-2BUL001
Cray Research Superservers, Inc.	151-2CRA001
Data General Corporation	151-2DGC001
Digital Equipment Corporation	151-2DEC001, 151-2DEC002, 151-2DEC003, 151-2DEC004, 151-2DEC005, 151-2DEC006
Hewlett-Packard Company	151-2HPC001, 151-2HPC002, 151-2HPC003, 151-2HPC004, 151-2HPC005, 151-2HPC006, 151-2HPC007, 151-2HPC008, 151-2HPC009, 151-2HPC010, 151-2HPC011
Intergraph Corporation	151-2INT001
International Business Machines Corp.	151-2IBM001, 151-2IBM002, 151-2IBM003, 151-2IBM004, 151-2IBM005, 151-2IBM006, 151-2IBM007, 151-2IBM008, 151-2IBM009
Microsoft Corporation	151-2MSC001, 151-2MSC002, 151-2MSC003, 151-2MSC004, 151-2MSC005, 151-2MSC006, 151-2MSC007, 151-2MSC008, 151-2MSC009, 151-2MSC010, 151-2MSC011, 151-2MSC012, 151-2MSC013, 151-2MSC014, 151-2MSC015, 151-2MSC016, 151-2MSC017, 151-2MSC018, 151-2MSC019, 151-2MSC020, 151-2MSC021
Novell, Inc.	151-2NOV001, 151-2NOV002, 151-2NOV003, 151-2NOV004, 151-2NOV005, 151-2NOV006, 151-2NOV007
The Santa Cruz Operation, Inc.	151-2SCO001, 151-2SCO002, 151-2SCO003, 151-2SCO004, 151-2SCO005, 151-2SCO006, 151-2SCO007, 151-2SCO008, 151-2SCO009
Sequent Computer Systems, Inc.	151-2SEQ001, 151-2SEQ002
Silicon Graphics, Inc.	151-2SGI001, 151-2SGI002, 151-2SGI003, 151-2SGI004, 151-2SGI005
Stratus Computer, Inc.	151-2SRA001
SunSoft, Inc.	151-2SUN001, 151-2SUN002, 151-2SUN003, 151-2SUN004, 151-2SUN005, 151-2SUN006, 151-2SUN007, 151-2SUN008, 151-2SUN009, 151-2SUN010, 151-2SUN011, 151-2SUN012, 151-2SUN013, 151-2SUN014, 151-2SUN015, 151-2SUN016, 151-2SUN017, 151-2SUN018, 151-2SUN019, 151-2SUN020, 151-2SUN021, 151-2SUN022, 151-2SUN023, 151-2SUN024, 151-2SUN025, 151-2SUN026, 151-2SUN027, 151-2SUN028, 151-2SUN029
Tandem Computers Incorporated	151-2TAN001, 151-2TAN002
Tenon Intersystems	151-2TEN001, 151-2TEN002, 151-2TEN003, 151-2TEN004
Unisys Corporation	151-2UNI001, 151-2UNI002, 151-2UNI003, 151-2UNI004, 151-2UNI005, 151-2UNI006

SYSTEM SUPPLIERS

<u>SYSTEM SUPPLIERS</u>	<u>REFERENCE FILE #</u>
Amdahl Corporation	151-2AMD001
American Megatrends, Inc.	151-2SCO001, 151-2SCO006
Apple Computer, Inc.	151-2TEN001, 151-2TEN002, 151-2TEN003, 151-2TEN004
AST Research, Inc.	151-2MSC011, 151-2MSC016, 151-2NOV001, 151-2NOV002
AT&T Global Information Solutions	151-2ATT001, 151-2ATT002, 151-2ATT003, 151-2ATT004, 151-2ATT005, 151-2NOV003, 151-2NOV004, 151-2NOV005
Axil Workstations	151-2SUN009, 151-2SUN010, 151-2SUN017, 151-2SUN018, 151-2SUN026
BULL S.A.	151-2BUL001
Compaq Computer Corporation	151-2MSC002, 151-2MSC004, 151-2MSC020, 151-2MSC021, 151-2NOV006, 151-2NOV007, 151-2SCO002, 151-2SCO003, 151-2SCO004, 151-2SCO005, 151-2SUN008
Cray Research Superservers, Inc.	151-2CRA001
Data General Corporation	151-2DGC001
Dell Computer Corporation	151-2SUN012
Digital Equipment Corporation	151-2DEC001, 151-2DEC002, 151-2DEC003, 151-2DEC004, 151-2DEC005, 151-2DEC006, 151-2MSC005, 151-2MSC006
Hewlett-Packard Company	151-2HPC001, 151-2HPC002, 151-2HPC003, 151-2HPC004, 151-2HPC005, 151-2HPC006, 151-2HPC007, 151-2HPC008, 151-2HPC009, 151-2HPC010, 151-2HPC011
Intel Corporation	151-2MSC007, 151-2MSC008, 151-2MSC009, 151-2MSC010, 151-2MSC012, 151-2MSC013, 151-2MSC014, 151-2MSC015, 151-2MSC017, 151-2MSC018, 151-2MSC019
Intergraph Corporation	151-2INT001
International Business Machines Corp.	151-2IBM001, 151-2IBM002, 151-2IBM003, 151-2IBM004, 151-2IBM005, 151-2IBM006, 151-2IBM007, 151-2IBM008, 151-2IBM009
Microlog Corporation	151-2SCO007, 151-2SCO008
Olivetti	151-2MSC001, 151-2MSC003
Sequent Computer Systems, Inc.	151-2SEQ001, 151-2SEQ002
Silicon Graphics, Inc.	151-2SGI001, 151-2SGI002, 151-2SGI003
Stratus Computer, Inc.	151-2SRA001
Sun Microsystems Computer Corp., Inc.	151-2SUN001, 151-2SUN002, 151-2SUN003, 151-2SUN004, 151-2SUN005, 151-2SUN006, 151-2SUN007, 151-2SUN011, 151-2SUN013, 151-2SUN014, 151-2SUN015, 151-2SUN016, 151-2SUN019, 151-2SUN020, 151-2SUN021, 151-2SUN022, 151-2SUN023, 151-2SUN024, 151-2SUN025, 151-2SUN027, 151-2SUN028, 151-2SUN029
Tandem Computers Incorporated	151-2TAN009, 151-2SGI004, 151-2SGI005, 151-2TAN001, 151-2TAN002
Unisys Corporation	151-2UNI001, 151-2UNI002, 151-2UNI003, 151-2UNI004, 151-2UNI005, 151-2UNI006

NIST POSIX VALIDATED PRODUCTS, *Continued*

PRODUCTS

151-2AMD001 Issued: 03/18/94 Type: Native

Product Supplier: Amdahl Corporation

Product: UTS Version 4 Release 2

PCD: UTS 4.2 POSIX.1 and FIPS 151-2 Conformance Document

GTI - NOT Provided by Product MC - NOT Provided by Product

MFS - Supported by Product AP - Supported by Product

Computer Hardware Supplier: Amdahl Corporation

Computer Hardware Product: Amdahl 5995M-4550

C Compiler: Amdahl C, Version 2.0

APTL: 100342 Mindcraft, Inc.

151-2ATT001 Issued: 04/03/95 Type: Native

Product Supplier: AT&T Global Information Solutions

Product: NCR UNIX SVR4 MP-RAS Enterprise Operating Environment, Release 2.03

PCD: NCR UNIX SVR4 MP-RAS POSIX Conformance Document, February 1995

GTI - Not Provided by Product MC - Supported by Product

MFS - Supported by Product AP - Supported by Product

Computer Hardware Supplier: AT&T Global Information Solutions

Computer Hardware Product: AT&T GIS System 3000, Model 3600

C Compiler: NCR System 3000 C Development Toolkit, Release 2.03, with XPG4 Application Extension (XAE)

APTL: 100343 DataFocus Incorporated

151-2ATT002 Issued: 05/12/95 Type: Native

Product Supplier: AT&T Global Information Solutions

Product: NCR UNIX SVR4 MP-RAS, Release 2.03

PCD: NCR UNIX SVR4 MP-RAS POSIX Conformance Document, February 1995

GTI - Not Provided by Product MC - Supported by Product

MFS - Supported by Product AP - Supported by Product

Computer Hardware Supplier: AT&T Global Information Solutions

Computer Hardware Product: AT&T GIS System 3000, Model 3575

C Compiler: NCR System 3000 C Development Toolkit, Release 2.03, with XPG4 Application Extension (XAE)

APTL: 100343 DataFocus Incorporated

151-2ATT003 Issued: 03/17/95 Type: Native

Product Supplier: AT&T Global Information Solutions

Product: NCR UNIX SVR4 MP-RAS, Release 2.03

PCD: NCR UNIX SVR4 MP-RAS POSIX Conformance Document, February 1995

GTI - Supported by Product MC - Supported by Product

MFS - Supported by Product AP - Supported by Product

Computer Hardware Supplier: AT&T Global Information Solutions

Computer Hardware Product: AT&T GIS System 3000, Model 3525

C Compiler: NCR System 3000 C Development Toolkit, Release 2.03, with XPG4 Application Extension (XAE)

APTL: 100343 DataFocus Incorporated

151-2ATT004 Issued: 05/12/95 Type: Native

Product Supplier: AT&T Global Information Solutions

Product: NCR UNIX SVR4 MP-RAS, Release 2.03

PCD: NCR UNIX SVR4 MP-RAS POSIX Conformance Document, February 1995

GTI - Supported by Product MC - Supported by Product

MFS - Supported by Product AP - Supported by Product

Computer Hardware Supplier: AT&T Global Information Solutions

Computer Hardware Product: AT&T GIS System 3000, Model 3455, with LifeKeeper, Version 1.0

C Compiler: NCR System 3000 C Development Toolkit, Release 2.03, with XPG4 Application Extension (XAE)

APTL: 100343 DataFocus Incorporated

151-2ATT005 Issued: 03/23/95 Type: Native

Product Supplier: AT&T Global Information Solutions

Product: NCR UNIX SVR4 MP-RAS, Release 2.03

PCD: NCR UNIX SVR4 MP-RAS POSIX Conformance Document, February 1995

GTI - Supported by Product MC - Supported by Product

MFS - Supported by Product AP - Supported by Product

Computer Hardware Supplier: AT&T Global Information Solutions

Computer Hardware Product: AT&T GIS System 3000, Model 3455

C Compiler: NCR System 3000 C Development Toolkit, Release 2.03, with XPG4 Application Extension (XAE)

APTL: 100343 DataFocus Incorporated

151-2BUL001 Issued: 04/03/95 Type: Native

Product Supplier: BULL S.A.

Product: AIX™ version 4 release 1 with PTF 170690 and PTF U436339

PCD: BULL DPX/20 POSIX1 Conformance document AIX Version 4.1 ref:86A270AQ00

GTI - Supported by Product MC - Supported by Product

MFS - Supported by Product AP - Supported by Product

Computer Hardware Supplier: BULL S.A.

Computer Hardware Product: DPX/20 ESCALATM model D201

C Compiler: C for AIX Version 03.01.0001

APTL: 100373 BULL S.A.

151-2CRA001 Issued: 09/07/94 Type: Native

Product Supplier: Cray Research Superservers, Inc.

Product: Solaris 2.3 CRAY Version R Maintenance Update 1 with Patch 10647-03

PCD: Cray Solaris 2.3 POSIX.1 Conformance Document

GTI - NOT Provided by Product MC - Supported by Product

MFS - Supported by Product AP - Supported by Product

Computer Hardware Supplier: Cray Research Superservers, Inc.

Computer Hardware Product: Cray SUPERSERVER 6400

C Compiler: Sun C Compiler Version 2.0.1, Released October 3, 1992

APTL: 100342 Mindcraft, Inc.

151-2DEC001 Issued: 08/12/93 Type: Hosted

Product Supplier: Digital Equipment Corporation

Product: POSIX for Open VMS AXP Version X1.0-041

PCD: POSIX 1003.1-1990 Conformance Document for Open VMS AXP (July 1993)

GTI - NOT Provided by Product MC - NOT Provided by Product

MFS - Supported by Product AP - Supported by Product

Computer Hardware Supplier: Digital Equipment Corporation

Computer Hardware Product: DECsystem, Model 4000/610

Host Operating System Supplier: Digital Equipment Corporation

Host Operating System: OpenVMS AXP Version 1.5

C Compiler: DEC C Version 1, Release 3

APTL: 100343 DataFocus Incorporated

151-2DEC002 Issued: 02/28/94 Type: Native

Product Supplier: Digital Equipment Corporation

Product: DEC OSF/1 Version 2.0, released March, 1994

PCD: DEC OSF/1 POSIX.1 Conformance Document (Order Number:AA-PS35B-TE)

GTI - Supported by Product MC - NOT Provided by Product

MFS - Supported by Product AP - Supported by Product

Computer Hardware Supplier: Digital Equipment Corporation

Computer Hardware Product: DEC 3000, Model 400

C Compiler: DEC OSF/1 C Compiler, Version 2.0

APTL: 100342 Mindcraft, Inc.

NIST POSIX VALIDATED PRODUCTS, *Continued*

151-2DEC003 Issued: 08/05/94 Type: Hosted
 Product Supplier: **Digital Equipment Corporation**
 Product: **POSIX for Open VMS AXP Version 2.0**
 PCD: POSIX 1003.1-1990 Conformance Document for Open VMS AXP, June 1994
 GTI - Not Provided by Product MC - Not Provided by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Digital Equipment Corporation
 Computer Hardware Product: DECsystem, Model 4000/610
 Host Operating System Supplier: Digital Equipment Corporation
 Host Operating System: OpenVMS AXP, Version 6.1
 C Compiler: DEC C for OpenVMS AXP Version 4.0
 APTL: 100343 DataFocus Incorporated

151-2DEC004 Issued: 08/05/94 Type: Hosted
 Product Supplier: **Digital Equipment Corporation**
 Product: **POSIX for Open VMS VAX, Version 2.0**
 PCD: POSIX 1003.1-1990 Conformance Document for Open VMS AXP, June 1994
 GTI - Not Provided by Product MC - Not Provided by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Digital Equipment Corporation
 Computer Hardware Product: DECsystem, Model 4000-500
 Host Operating System Supplier: Digital Equipment Corporation
 Host Operating System: OpenVMS VAX, Version 6.1
 C Compiler: DEC C for OpenVMS VAX Version 4.0
 APTL: 100343 DataFocus Incorporated

151-2DEC005 Issued: 08/17/94 Type: Native
 Product Supplier: **Digital Equipment Corporation**
 Product: **DEC OSF/1 Version 3.0, released August, 1994**
 PCD: DEC OSF/1 POSIX.1 Conformance Document (Order Number: AA-PS35C-TE)
 GTI - Supported by Product MC - Not Provided by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Digital Equipment Corporation
 Computer Hardware Product: DEC 2100 model A500MP
 C Compiler: DEC OSF/1 C Compiler, Version 3.0
 APTL: 100342 Mindcraft, Inc.

151-2DEC006 Issued: 06/02/95 Type: Native
 Product Supplier: **Digital Equipment Corporation**
 Product: **Digital UNIX® 3.2c**
 PCD: DEC OSF/1 POSIX.1 Conformance Document (Order Number: AA-PS35C-TE)
 GTI - Supported by Product MC - Not Provided by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Digital Equipment Corporation
 Computer Hardware Product: AlphaStation 200 Model 4/166
 C Compiler: Digital UNIX® C Compiler V3.2c
 APTL: 100342 Mindcraft, Inc.

151-2DGC001 Issued: 04/12/94 Type: Native
 Product Supplier: **Data General Corporation**
 Product: **DG/US 5.4 Release 3.00 MU01**
 PCD: POSIX.1 Conformance Document for the LG/UX™ System
 Revision 04, March 1994
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Data General Corporation
 Computer Hardware Product: Data General AViON AV8500 Model G70595
 C Compiler: gcc 2.4.5.6
 APTL: 100342 Mindcraft, Inc.

151-2HPC001 Issued: 05/12/94 Type: Native
 Product Supplier: **Hewlett-Packard Company**
 Product: **HP-UX Release 9.09 with patches PHCO_3869, PHCO_4152, and PHKL_4149**
 PCD: POSIX Conformance Document, HP 9000 Computers, Third Edition, 1994. HP Part Number B2355-90034
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Hewlett-Packard Company
 Computer Hardware Product: Series 9000 Model 755
 C Compiler: HP C Compiler Version A.09.33
 APTL: 100342 Mindcraft, Inc.

151-2HPC002 Issued: 05/12/94 Type: Native
 Product Supplier: **Hewlett-Packard Company**
 Product: **HP-UX Release 9.09 with patches PHCO_3869, PHCO_4152, and PHKL_4149**
 PCD: POSIX Conformance Document, HP 9000 Computers, Third Edition, 1994. HP Part Number B2355-90034
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Hewlett-Packard Company
 Computer Hardware Product: Series 9000 Model 725
 C Compiler: HP C Compiler Version A.09.33
 APTL: 100342 Mindcraft, Inc.

151-2HPC003 Issued: 06/01/94 Type: Native
 Product Supplier: **Hewlett-Packard Company**
 Product: **HP-UX Release 9.05 with patches PHKL_4110, and PHNE_4111**
 PCD: POSIX Conformance Document, HP 9000 Computers, Third Edition, 1994. HP Part Number B2355-90049
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Hewlett-Packard Company
 Computer Hardware Product: Series 9000 Model 735
 C Compiler: HP C Compiler Version A.09.33
 APTL: 100342 Mindcraft, Inc.

151-2HPC004 Issued: 06/01/94 Type: Native
 Product Supplier: **Hewlett-Packard Company**
 Product: **HP-UX Release 9.05 with patches PHKL_4110, and PHNE_4111**
 PCD: POSIX Conformance Document, HP 9000 Computers, Third Edition, 1994. HP Part Number B2355-90049
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Hewlett-Packard Company
 Computer Hardware Product: Series 9000 Model 725
 C Compiler: HP C Compiler Version A.09.33
 APTL: 100342 Mindcraft, Inc.

151-2HPC005 Issued: 07/01/94 Type: Native
 Product Supplier: **Hewlett-Packard Company**
 Product: **HP-UX 10.00.S1**
 PCD: POSIX Conformance Document, HP 9000 Computers, Fourth Edition, 1994. HP Part Number B2355-90049
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Hewlett-Packard Company
 Computer Hardware Product: Series 9000 Model 770
 C Compiler: HP C Compiler Version X.10.23
 APTL: 100342 Mindcraft, Inc.

NIST POSIX VALIDATED PRODUCTS, *Continued*

151-2HPC006 Issued: 07/01/94 Type: Native
Product Supplier: Hewlett-Packard Company
Product: HP-UX 10.00.S1
 PCD: POSIX Conformance Document, HP 9000 Computers, Fourth Edition, 1994. HP Part Number B2355-90049
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
Computer Hardware Supplier: Hewlett-Packard Company
Computer Hardware Product: Series 9000 Model 712
C Compiler: HP C Compiler Version X.10.23
APTL: 100342 Mindcraft, Inc.

151-2HPC007 Issued: 07/01/94 Type: Native
Product Supplier: Hewlett-Packard Company
Product: HP-UX 10.09.S1
 PCD: POSIX Conformance Document, HP 9000 Computers, Fourth Edition, 1994. as modified by POSIX Conformance Document, HP-UX
 Compartment Mode Workstation Addendum, HP 9000 Computers, First Edition, 1994.
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
Computer Hardware Supplier: Hewlett-Packard Company
Computer Hardware Product: Series 9000 Model 712
C Compiler: HP C Compiler Version X.10.18
APTL: 100342 Mindcraft, Inc.

151-2HPC008 Issued: 07/01/94 Type: Native
Product Supplier: Hewlett-Packard Company
Product: HP-UX 10.09.S1
 PCD: POSIX Conformance Document, HP 9000 Computers, Fourth Edition, 1994. as modified by POSIX Conformance Document, HP-UX
 Compartment Mode Workstation Addendum, HP 9000 Computers, First Edition, 1994.
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
Computer Hardware Supplier: Hewlett-Packard Company
Computer Hardware Product: Series 9000 Model 770
C Compiler: HP C Compiler Version X.10.18
APTL: 100342 Mindcraft, Inc.

151-2HPC009 Issued: 03/02/95 Type: Native
Product Supplier: Hewlett-Packard Company
Product: HP-UX Release 10.00
 PCD: POSIX Conformance Document, HP 9000 Computers, Third Edition, 1994.
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
Computer Hardware Supplier: Hewlett-Packard Company
Computer Hardware Product: 9000 Series 700 Model J210
C Compiler: HP C Compiler Version A.10.03
APTL: 100342 Mindcraft, Inc.

151-2HPC010 Issued: 03/02/95 Type: Native
Product Supplier: Hewlett-Packard Company
Product: HP-UX Release 10.00
 PCD: POSIX Conformance Document, HP 9000 Computers, Third Edition, 1994. HP Part Number B2355-90049.
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
Computer Hardware Supplier: Hewlett-Packard Company
Computer Hardware Product: 9000/770 J200
C Compiler: HP C Compiler Version A.10.03
APTL: 100342 Mindcraft, Inc.

151-2HPC011 Issued: 03/02/95 Type: Native
Product Supplier: Hewlett-Packard Company
Product: HP-UX Release 10.00
 PCD: POSIX Conformance Document, HP 9000 Computers, Third Edition, 1994. HP Part Number B2355-90049.
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
Computer Hardware Supplier: Hewlett-Packard Company
Computer Hardware Product: 9000/829 K400
C Compiler: HP C Compiler Version A.10.03
APTL: 100342 Mindcraft, Inc.

151-2IBM001 Issued: 03/08/94 Type: Native
Product Supplier: International Business Machines Corporation
Product: MVS/ESA 4.3 OpenEdition™ 1.0
 PCD: OpenEdition MVS POSIX.1 Conformance Document, Document Number SC23-3011-00
 GTI - NOT Provided by Product MC - NOT Provided by Product
 MFS - Supported by Product AP - Supported by Product
Computer Hardware Supplier: International Business Machines Corporation
Computer Hardware Product: ES/9000-570
C Compiler: IBM SAA AD/Cycle® C/370 Version 1 Release 2
APTL: 100342 Mindcraft, Inc.

151-2IBM002 Issued: 02/17/94 Type: Native
Product Supplier: International Business Machines Corporation
Product: AIX Version 3.2.5 for RISC System/6000 with PTFs: U423984, U424399, U424507, U424590, U425456, U424587, U425984, U425988, U425997, U426001, U426014, U425858
 PCD: AIX Version 3.2 POSIX Conformance Document
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
Computer Hardware Supplier: International Business Machines Corporation
Computer Hardware Product: RISC System/6000, Model 590
C Compiler: XLC Version 1, Release 3
APTL: 100342 Mindcraft, Inc.

151-2IBM003 Issued: 02/17/94 Type: Native
Product Supplier: International Business Machines Corporation
Product: AIX Version 3.2.5 for RISC System/6000 with PTFs: U423984, U424399, U424507, U424590, U425456, U424587, U425984, U425988, U425997, U426001, U426014, U425858
 PCD: AIX Version 3.2 POSIX Conformance Document
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
Computer Hardware Supplier: International Business Machines Corporation
Computer Hardware Product: RISC System/6000, Model 250
C Compiler: XLC Version 1, Release 3
APTL: 100342 Mindcraft, Inc.

151-2IBM004 Issued: 02/17/94 Type: Native
Product Supplier: International Business Machines Corporation
Product: AIX Version 3.2.5 for RISC System/6000 with PTFs: U423984, U424399, U424507, U424590, U425456, U424587, U425984, U425988, U425997, U426001, U426014, U425858
 PCD: AIX Version 3.2 POSIX Conformance Document
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
Computer Hardware Supplier: International Business Machines Corporation
Computer Hardware Product: RISC System/6000, Model 360
C Compiler: XLC Version 1, Release 3
APTL: 100342 Mindcraft, Inc.

NIST POSIX VALIDATED PRODUCTS, *Continued*

151-2IBM005 Issued: 04/29/94 Type: Native
 Product Supplier: **International Business Machines Corporation**
 Product: **AIX Version 3.2.5 for RISC System/6000 with PTFs: U423984, U424399, U425456, U425984, U425988, U425997, U426001, U426014, U427208, U427727, U427892**
 PCD: AIX Version 3.2 POSIX Conformance Document, part number GC23-2159-02, Third Edition
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: International Business Machines Corporation
 Computer Hardware Product: RISC System/6000, Model 230
 C Compiler: XLC Version 1, Release 3
 APTL: 100342 Mindcraft, Inc.

151-2IBM006 Issued: 04/29/94 Type: Native
 Product Supplier: **International Business Machines Corporation**
 Product: **AIX Version 3.2.5 for RISC System/6000 with PTFs: U423984, U424399, U425456, U425984, U425988, U425997, U426001, U426014, U427208, U427727, U427892**
 PCD: AIX Version 3.2 POSIX Conformance Document, part number GC23-2159-02, Third Edition
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: International Business Machines Corporation
 Computer Hardware Product: RISC System/6000, Model 570
 C Compiler: XLC Version 1, Release 3
 APTL: 100342 Mindcraft, Inc.

151-2IBM007 Issued: 11/08/94 Type: Native
 Product Supplier: **International Business Machines Corporation**
 Product: **MVS/ESA 5.1.0**
 PCD: OpenEdition MVS POSIX.1 Conformance Document, Document Number GC23-3011-02
 GTI - Not Provided by Product MC - Not Provided by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: International Business Machines Corporation
 Computer Hardware Product: ES/9000/610
 C Compiler: IBM SAA AD/Cycle[®] C/370 Version 1 Release 2
 APTL: 100342 Mindcraft, Inc.

151-2IBM008 Issued: 4/14/95 Type: Native
 Product Supplier: **International Business Machines Corporation**
 Product: **AIX Version 4.1.2 for RISC System/6000 with APAR IX49490**
 PCD: AIX Version 4.1 POSIX Conformance Document, January, 1995
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: International Business Machines Corporation
 Computer Hardware Product: RISC System/6000 model 3BT
 C Compiler: C for AIX version 3.1.1
 APTL: 100342 Mindcraft, Inc.

151-2IBM009 Issued: 4/14/95 Type: Native
 Product Supplier: **International Business Machines Corporation**
 Product: **AIX Version 4.1.2 for RISC System/6000 with APAR IX49490**
 PCD: AIX Version 4.1 POSIX Conformance Document, January, 1995
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: International Business Machines Corporation
 Computer Hardware Product: RISC System/6000 model 250
 C Compiler: C for AIX version 3.1.1
 APTL: 100342 Mindcraft, Inc.

151-2INT001 Issued: 07/08/94 Type: Native
 Product Supplier: **Intergraph Corporation**
 Product: **CLIX UNXBOOT, Version 07.05.17.00, Release 22-FEB-1994**
 PCD: CLIX POSIX Conformance Document, July 1994
 GTI - Supported by Product MC - NOT Provided by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Intergraph Corporation
 Computer Hardware Product: Intergraph 2800 Series Workstation, Model 2830
 C Compiler: CLIPPER Advanced Optimizing C Compiler, Version 07.05.01.61, Release 03-MAR-1994
 APTL: 100343 DataFocus Incorporated

151-2MSC001 Issued: 04/12/94 Type: Cooperating Hosted
 Product Supplier: **Microsoft Corporation**
 Product: **Microsoft Windows NT POSIX Subsystem Version 3.1**
 PCD: Microsoft Windows NT POSIX Subsystem POSIX Conformance Document
 GTI - NOT Provided by Product MC - NOT Provided by Product
 MFS - NOT Provided by Product AP - NOT Provided by Product
 Computer Hardware Supplier: Olivetti
 Computer Hardware Product: M700-10
 Host & Development Operating System Supplier: Microsoft Corporation
 Host & Development Operating System: Windows NT Version 3.1
 C Compiler: Microsoft[®] C Centaur Optimizing Compiler Version 8.00.081
 APTL: 100342 Mindcraft, Inc.

151-2MSC002 Issued: 04/12/94 Type: Cooperating Hosted
 Product Supplier: **Microsoft Corporation**
 Product: **Microsoft Windows NT POSIX Subsystem Version 3.1**
 PCD: Microsoft Windows NT POSIX Subsystem POSIX Conformance Document
 GTI - NOT Provided by Product MC - NOT Provided by Product
 MFS - NOT Provided by Product AP - NOT Provided by Product
 Computer Hardware Supplier: Compaq
 Computer Hardware Product: Deskpro 4/66i
 Host & Development Operating System Supplier: Microsoft Corporation
 Host & Development Operating System: Windows NT Version 3.1
 C Compiler: Visual C++ for Windows and Windows NT, 32-bit Edition, Version 1.00.
 APTL: 100342 Mindcraft, Inc.

151-2MSC003 Issued: 04/12/94 Type: Cooperating Hosted
 Product Supplier: **Microsoft Corporation**
 Product: **Microsoft Windows NT POSIX Subsystem Version 3.1**
 PCD: Microsoft Windows NT POSIX Subsystem POSIX Conformance Document
 GTI - NOT Provided by Product MC - NOT Provided by Product
 MFS - NOT Provided by Product AP - NOT Provided by Product
 Computer Hardware Supplier: Olivetti
 Computer Hardware Product: M700-10
 Host & Development Operating System Supplier: Microsoft Corporation
 Host & Development Operating System: Windows NT Advanced Server Version 3.1
 C Compiler: Microsoft[®] C Centaur Optimizing Compiler Version 8.00.081
 APTL: 100342 Mindcraft, Inc.

NIST POSIX VALIDATED PRODUCTS, *Continued*

151-2MSC004 Issued: 04/12/94 Type: Cooperating Hosted
 Product Supplier: **Microsoft Corporation**
 Product: **Microsoft Windows NT POSIX Subsystem Version 3.1**
 PCD: Microsoft Windows NT POSIX Subsystem POSIX Conformance Document
 GTI - NOT Provided by Product MC - NOT Provided by Product
 MFS - NOT Provided by Product AP - NOT Provided by Product
 Computer Hardware Supplier: Compaq
 Computer Hardware Product: Deskpro 4/66i
 Host & Development Operating System Supplier: Microsoft Corporation
 Host & Development Operating System: Microsoft Windows NT Advanced Server Version 3.1
 C Compiler: Visual C++ for Windows and Windows NT, 32-bit Edition, Version 1.00.
 APTL: 100342 Mindcraft, Inc.

151-2MSC005 Issued: 05/12/94 Type: Cooperating Hosted
 Product Supplier: **Microsoft Corporation**
 Product: **Microsoft Windows NT POSIX Subsystem Version 3.1**
 PCD: Microsoft Windows NT POSIX Subsystem POSIX Conformance Document
 GTI - NOT Provided by Product MC - NOT Provided by Product
 MFS - NOT Provided by Product AP - NOT Provided by Product
 Computer Hardware Supplier: Digital Equipment Corporation
 Computer Hardware Product: DECpc AXP/150
 Host & Development Operating System Supplier: Microsoft Corporation
 Host & Development Operating System: Microsoft Windows NT™ Version 3.1
 C Compiler: Microsoft C/C++ Optimizing Compiler Version 8.00.9B
 APTL: 100342 Mindcraft, Inc.

151-2MSC006 Issued: 05/12/94 Type: Cooperating Hosted
 Product Supplier: **Microsoft Corporation**
 Product: **Microsoft Windows NT POSIX Subsystem Version 3.1**
 PCD: Microsoft Windows NT POSIX Subsystem POSIX Conformance Document
 GTI - NOT Provided by Product MC - NOT Provided by Product
 MFS - NOT Provided by Product AP - NOT Provided by Product
 Computer Hardware Supplier: Digital Equipment Corporation
 Computer Hardware Product: DECpc AXP/150
 Host & Development Operating System Supplier: Microsoft Corporation
 Host & Development Operating System: Microsoft Windows NT™ Advanced Server Version 3.1
 C Compiler: Microsoft C/C++ Optimizing Compiler Version 8.00.9B
 APTL: 100342 Mindcraft, Inc.

151-2MSC007 Issued: 10/05/94 Type: Cooperating Hosted
 Product Supplier: **Microsoft Corporation**
 Product: **Microsoft Windows NT POSIX Subsystem Version 3.5**
 PCD: Microsoft Windows NT POSIX Subsystem POSIX Conformance Document, February 1994
 GTI - Not Provided by Product MC - Not Provided by Product
 MFS - Not Provided by Product AP - Not Provided by Product
 Computer Hardware Supplier: Intel
 Computer Hardware Product: Intel Classic R Plus, i486/33
 Host & Development Operating System Supplier: Microsoft Corporation
 Host & Development Operating System: Microsoft Windows NT™ Workstation
 Version 3.5, Release Candidate 1
 C Compiler: Microsoft 32-bit C/C++ Optimizing Compiler, Version 8.50.4136 for 80x86
 APTL: 100343 DataFocus, Inc.

151-2MSC008 Issued: 11/17/94 [10/13/94] Type: Cooperating Hosted
 Product Supplier: **Microsoft Corporation**
 Product: **Microsoft Windows NT POSIX Subsystem Version 3.5**
 PCD: Microsoft Windows NT POSIX Subsystem POSIX Conformance Document, February 1994
 GTI - Not Provided by Product MC - Not Provided by Product
 MFS - Not Provided by Product AP - Not Provided by Product
 Computer Hardware Supplier: Intel
 Computer Hardware Product: Intel Xpress, i486DX2/66
 Host & Development Operating System Supplier: Microsoft Corporation
 Host & Development Operating System: Microsoft Windows NT™ Server, Version 3.5
 C Compiler: Microsoft 32-bit C/C++ Optimizing Compiler, Version 8.50.4136 for 80x86
 APTL: 100343 DataFocus, Inc.

151-2MSC009 Issued: 10/25/94 [10/13/94] Type: Cooperating Hosted
 Product Supplier: **Microsoft Corporation**
 Product: **Microsoft Windows NT POSIX Subsystem Version 3.5**
 PCD: Microsoft Windows NT POSIX Subsystem POSIX Conformance Document, February 1994
 GTI - Not Provided by Product MC - Not Provided by Product
 MFS - Not Provided by Product AP - Not Provided by Product
 Computer Hardware Supplier: Intel
 Computer Hardware Product: Intel Xpress, Pentium/60
 Host & Development Operating System Supplier: Microsoft Corporation
 Host & Development Operating System: Microsoft Windows NT™ Server, Version 3.5
 C Compiler: Microsoft 32-bit C/C++ Optimizing Compiler, Version 8.50.4136 for 80x86
 APTL: 100343 DataFocus, Inc.

151-2MSC010 Issued: 11/17/94 [10/13/94] Type: Cooperating Hosted
 Product Supplier: **Microsoft Corporation**
 Product: **Microsoft Windows NT POSIX Subsystem Version 3.5**
 PCD: Microsoft Windows NT POSIX Subsystem POSIX Conformance Document, February 1994
 GTI - Not Provided by Product MC - Not Provided by Product
 MFS - Not Provided by Product AP - Not Provided by Product
 Computer Hardware Supplier: Intel
 Computer Hardware Product: Intel Classic R Plus, i486DX33
 Host & Development Operating System Supplier: Microsoft Corporation
 Host & Development Operating System: Microsoft Windows NT™ Workstation, Version 3.5
 C Compiler: Microsoft 32-bit C/C++ Optimizing Compiler, Version 8.50.4136 for 80x86
 APTL: 100343 DataFocus, Inc.

NIST POSIX VALIDATED PRODUCTS, *Continued*

151-2MSC011 Issued: 10/13/94 Type: Cooperating Hosted
 Product Supplier: **Microsoft Corporation**
 Product: **Microsoft® Windows NT™** POSIX Subsystem Version 3.5
 PCD: Microsoft® Windows NT™ POSIX Subsystem POSIX
 Conformance Document, February 1994
 GTI - Not Provided by Product MC - Not Provided by Product
 MFS - Not Provided by Product AP - Not Provided by Product

Computer Hardware Supplier: AST
 Computer Hardware Product: PowerExec 4/33SL
 Host & Development Operating System Supplier: Microsoft Corporation
 Host & Development Operating System: Microsoft® Windows NT™
 Workstation, Version 3.5
 C Compiler: Microsoft® 32-bit C/C++ Optimizing Compiler, Version 8.50.4136 for 80x86
 APTL: 100343 DataFocus, Inc.

151-2MSC012 Issued: 11/17/94 Type: Cooperating Hosted
 Product Supplier: **Microsoft Corporation**
 Product: **Microsoft® Windows NT™** POSIX Subsystem Version 3.5
 PCD: Microsoft® Windows NT™ POSIX Subsystem POSIX
 Conformance Document, February 1994
 GTI - Not Provided by Product MC - Not Provided by Product
 MFS - Not Provided by Product AP - Not Provided by Product

Computer Hardware Supplier: Intel Corporation
 Computer Hardware Product: Intel Xpress Dual Pentium 66
 Host & Development Operating System Supplier: Microsoft Corporation
 Host & Development Operating System: Microsoft® Windows NT™
 Server, Version 3.5
 C Compiler: Microsoft® 32-bit C/C++ Optimizing Compiler, Version 8.50.4136 for 80x86
 APTL: 100343 DataFocus, Inc.

151-2MSC013 Issued: 11/17/94 Type: Cooperating Hosted
 Product Supplier: **Microsoft Corporation**
 Product: **Microsoft® Windows NT™** POSIX Subsystem Version 3.5
 PCD: Microsoft® Windows NT™ POSIX Subsystem POSIX
 Conformance Document, February 1994
 GTI - Not Provided by Product MC - Not Provided by Product
 MFS - Not Provided by Product AP - Not Provided by Product

Computer Hardware Supplier: Intel Corporation
 Computer Hardware Product: Intel Xpress i486DX33
 Host & Development Operating System Supplier: Microsoft Corporation
 Host & Development Operating System: Microsoft® Windows NT™
 Server, Version 3.5
 C Compiler: Microsoft® 32-bit C/C++ Optimizing Compiler, Version 8.50.4136 for 80x86
 APTL: 100343 DataFocus, Inc.

151-2MSC014 Issued: 11/17/94 Type: Cooperating Hosted
 Product Supplier: **Microsoft Corporation**
 Product: **Microsoft® Windows NT™** POSIX Subsystem Version 3.5
 PCD: Microsoft® Windows NT™ POSIX Subsystem POSIX Conformance
 Document, February 1994
 GTI - Not Provided by Product MC - Not Provided by Product
 MFS - Not Provided by Product AP - Not Provided by Product

Computer Hardware Supplier: Intel Corporation
 Computer Hardware Product: Classic R Plus i486DX2/66
 Host & Development Operating System Supplier: Microsoft Corporation
 Host & Development Operating System: Microsoft® Windows NT™
 Workstation, Version 3.5
 C Compiler: Microsoft® 32-bit C/C++ Optimizing Compiler, Version 8.50.4136 for 80x86
 APTL: 100343 DataFocus, Inc.

151-2MSC015 Issued: 11/17/94 Type: Cooperating Hosted
 Product Supplier: **Microsoft Corporation**
 Product: **Microsoft® Windows NT™** POSIX Subsystem Version 3.5
 PCD: Microsoft® Windows NT™ POSIX Subsystem POSIX Conformance
 Document, February 1994
 GTI - Not Provided by Product MC - Not Provided by Product
 MFS - Not Provided by Product AP - Not Provided by Product

Computer Hardware Supplier: Intel Corporation
 Computer Hardware Product: Classic R Plus i486SX33
 Host & Development Operating System Supplier: Microsoft Corporation
 Host & Development Operating System: Microsoft® Windows NT™
 Workstation, Version 3.5
 C Compiler: Microsoft® 32-bit C/C++ Optimizing Compiler, Version 8.50.4136 for 80x86
 APTL: 100343 DataFocus, Inc.

151-2MSC016 Issued: 9/11/95 Type: Cooperating Hosted
 Product Supplier: **Microsoft Corporation**
 Product: **Microsoft® Windows NT™** POSIX Subsystem Version 3.5.1
 PCD: Microsoft® Windows NT™ POSIX Subsystem POSIX Conformance
 Document, August 1995

GTI - Not Provided by Product MC - Not Provided by Product
 MFS - Not Provided by Product AP - Not Provided by Product
 Computer Hardware Supplier: AST
 Computer Hardware Product: Ascentia 910N Intel DX4/75
 Host & Development Operating System Supplier: Microsoft Corporation
 Host & Development Operating System: Microsoft® Windows NT™
 Workstation, Version 3.5.1
 C Compiler: Microsoft® 32-bit C/C++ Optimizing Compiler, Version 9.10 for 80x86
 APTL: 100343 DataFocus, Inc.

151-2MSC017 Issued: 9/11/95 Type: Cooperating Hosted
 Product Supplier: **Microsoft Corporation**
 Product: **Microsoft® Windows NT™** POSIX Subsystem Version 3.5.1
 PCD: Microsoft® Windows NT™ POSIX Subsystem POSIX Conformance
 Document, August 1995

GTI - Not Provided by Product MC - Not Provided by Product
 MFS - Not Provided by Product AP - Not Provided by Product
 Computer Hardware Supplier: Intel
 Computer Hardware Product: Pentium LPX Pentium 100
 Host & Development Operating System Supplier: Microsoft Corporation
 Host & Development Operating System: Microsoft® Windows NT™
 Workstation, Version 3.5.1
 C Compiler: Microsoft® 32-bit C/C++ Optimizing Compiler, Version 9.10 for 80x86
 APTL: 1003-3 DataFocus, Inc.

151-2MSC018 Issued: 9/11/95 Type: Cooperating Hosted
 Product Supplier: **Microsoft Corporation**
 Product: **Microsoft® Windows NT™** POSIX Subsystem Version 3.5.1
 PCD: Microsoft® Windows NT™ POSIX Subsystem POSIX Conformance
 Document, August 1995

NIST POSIX VALIDATED PRODUCTS, *Continued*

GTI - Not Provided by Product MC - Not Provided by Product
MFS - Not Provided by Product AP - Not Provided by Product

Computer Hardware Supplier: Intel
Computer Hardware Product: Intel Xpress Dual Pentium 66
Host & Development Operating System Supplier: Microsoft Corporation
Host & Development Operating System: Microsoft® Windows NT™ Server, Version 3.5.1
C Compiler: Microsoft® 32-bit C/C++ + Optimizing Compiler, Version 9.10 for 80x86
APTL: 100343 DataFocus, Inc.

151-2MSC0019 Issued: 9/11/95 Type: Cooperating Hosted
Product Supplier: **Microsoft Corporation**
Product: Microsoft® Windows NT™ POSIX Subsystem Version 3.5.1
PCD: Microsoft® Windows NT™ POSIX Subsystem POSIX Conformance Document, August 1995
GTI - Not Provided by Product MC - Not Provided by Product
MFS - Not Provided by Product AP - Not Provided by Product

Computer Hardware Supplier: Intel
Computer Hardware Product: Classic R Plus i486DX2/66
Host & Development Operating System Supplier: Microsoft Corporation
Host & Development Operating System: Microsoft® Windows NT™ Workstation, Version 3.5.1
C Compiler: Microsoft® 32-bit C/C++ + Optimizing Compiler, Version 9.10 for 80x86
APTL: 100343 DataFocus, Inc.

151-2MSC0020 Issued: 9/14/95 Type: Cooperating Hosted
Product Supplier: **Microsoft Corporation**
Product: Microsoft® Windows NT™ POSIX Subsystem Version 3.5.1
PCD: Microsoft® Windows NT™ POSIX Subsystem POSIX Conformance Document, August 1995
GTI - Not Provided by Product MC - Not Provided by Product
MFS - Not Provided by Product AP - Not Provided by Product

Computer Hardware Supplier: Compaq
Computer Hardware Product: Deskpro 4/66i
Host & Development Operating System Supplier: Microsoft Corporation
Host & Development Operating System: Microsoft® Windows NT™ Workstation, Version 3.5.1
C Compiler: Visual C++ for Windows™ and Windows NT™, 32-bit Edition, Version 2.00.
APTL: 100342 Mindcraft, Inc.

151-2MSC0021 Issued: 9/14/95 Type: Cooperating Hosted
Product Supplier: **Microsoft Corporation**
Product: Microsoft® Windows NT™ POSIX Subsystem Version 3.5.1
PCD: Microsoft® Windows NT™ POSIX Subsystem POSIX Conformance Document, August 1995
GTI - Not Provided by Product MC - Not Provided by Product
MFS - Not Provided by Product AP - Not Provided by Product

Computer Hardware Supplier: Compaq
Computer Hardware Product: Deskpro 4/66i
Host & Development Operating System Supplier: Microsoft Corporation
Host & Development Operating System: Microsoft® Windows NT™ Server, Version 3.5.1
C Compiler: Visual C++ for Windows™ and Windows NT™, 32-bit Edition, Version 2.00.
APTL: 100342 Mindcraft, Inc.

151-2NOV001 Issued: 05/03/94 Type: Native
Product Supplier: **Novell, Inc.**
Product: **UnixWare™ Application Server Version 1.1 with UnixWare Update 1.1.1 and PTF604**
PCD: UnixWare™ Programmer's Guide: POSIX.1 Conformance (First Edition)
GTI - Supported by Product MC - Supported by Product
MFS - Supported by Product AP - Supported by Product
Computer Hardware Supplier: AST Research, Inc.
Computer Hardware Product: Premium 486/33 model 3V
C Compiler: UnixWare™ SDK/Personal Utilities Version 1.1
APTL: 100342 Mindcraft, Inc.

151-2NOV002 Issued: 05/03/94 Type: Native
Product Supplier: **Novell, Inc.**
Product: **UnixWare™ Personal Edition Version 1.1 with UnixWare Update 1.1.1 and PTF604**
PCD: UnixWare™ Programmer's Guide: POSIX.1 Conformance (First Edition)
GTI - Supported by Product MC - Supported by Product
MFS - Supported by Product AP - Supported by Product
Computer Hardware Supplier: AST Research, Inc.
Computer Hardware Product: Premium 486/33 model 3V
C Compiler: UnixWare™ SDK/Personal Utilities Version 1.1
APTL: 100342 Mindcraft, Inc.

151-2NOV003 Issued: 10/21/94 Type: Native
Product Supplier: **Novell, Inc.**
Product: **UnixWare™ Personal Edition Version 1.1.2, with PTF621**
PCD: UnixWare™ Programmer's Guide: POSIX.1 Conformance (First Edition)
GTI - Supported by Product MC - Supported by Product
MFS - Supported by Product AP - Supported by Product
Computer Hardware Supplier: AT&T
Computer Hardware Product: Globalyst 515
C Compiler: UnixWare™ SDK/Personal Utilities Version 1.1
APTL: 100342 Mindcraft, Inc.

151-2NOV004 Issued: 10/25/94 Type: Native
Product Supplier: **Novell, Inc.**
Product: **UnixWare™ Personal Edition Version 1.1.2, with PTF621 and PCI SCSI driver 517-0002476**
PCD: UnixWare™ Programmer's Guide: POSIX.1 Conformance (First Edition)
GTI - Supported by Product MC - Supported by Product
MFS - Supported by Product AP - Supported by Product
Computer Hardware Supplier: AT&T
Computer Hardware Product: Globalyst 600
C Compiler: UnixWare™ SDK/Personal Utilities Version 1.1
APTL: 100342 Mindcraft, Inc.

151-2NOV005 Issued: 10/25/94 Type: Native
Product Supplier: **Novell, Inc.**
Product: **UnixWare™ Personal Edition Version 1.1.2, with PTF621 and PCI SCSI driver 517-0002476**
PCD: UnixWare™ Programmer's Guide: POSIX.1 Conformance (First Edition)
GTI - Supported by Product MC - Supported by Product
MFS - Supported by Product AP - Supported by Product
Computer Hardware Supplier: AT&T
Computer Hardware Product: Globalyst 550
C Compiler: UnixWare™ SDK/Personal Utilities Version 1.1
APTL: 100342 Mindcraft, Inc.

NIST POSIX VALIDATED PRODUCTS, *Continued*

151-2NOV006 Issued: 08/09/95 Type: Native
 Product Supplier: **Novell, Inc.**
 Product: **UnixWare™ Personal Edition Version 2.0.1**
 PCD: UnixWare™ Programmer's Guide: POSIX.1 Conformance (Issue 1.1)
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Compaq
 Computer Hardware Product: ProLiant 1000 Model 5/60-1
 C Compiler: UnixWare™ Software Development Kit Version 2.0
 APTL: 100342 Mindcraft, Inc.

151-2NOV007 Issued: 08/09/95 Type: Native
 Product Supplier: **Novell, Inc.**
 Product: **UnixWare™ Application Server Version 2.0.1**
 PCD: UnixWare™ Programmer's Guide: POSIX.1 Conformance (Issue 1.1)
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Compaq
 Computer Hardware Product: ProLiant 1000 Model 5/60-1
 C Compiler: UnixWare™ Software Development Kit Version 2.0
 APTL: 100342 Mindcraft, Inc.

151-2SCO001 Issued: 11/17/94 [10/21/94] Type: Native
 Product Supplier: **The Santa Cruz Operation, Inc.**
 Product: **SCO UNIX®, Release 3.2, Version 4.2**
 PCD: SCO UNIX® System V/386 Release 3.2.4 POSIX.1
 Conformance Document, October 1994
 GTI - Supported by Product MC - Not Provided by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: American Megatrends, Inc.
 Computer Hardware Product: AMI SBS 6400 Super Voyager VLB-III, Intel 486DX2/66
 C Compiler: SCO ODT Development System Release 3.0 C Compiler, with SCO XPG4 Supplement, Release 1.0
 APTL: 100343 DataFocus, Inc.

151-2SCO002 Issued: 10/21/94 Type: Native
 Product Supplier: **The Santa Cruz Operation, Inc.**
 Product: **SCO UNIX®, Release 3.2, Version 4.2**
 PCD: SCO UNIX® System V/386 Release 3.2.4 POSIX.1
 Conformance Document, October 1994
 GTI - Supported by Product MC - Not Provided by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Compaq Computer Corporation
 Computer Hardware Product: Compaq ProLiant 2000, Model 5/66
 C Compiler: SCO ODT Development System Release 3.0 C Compiler, with SCO XPG4 Supplement, Release 1.0
 APTL: 100343 DataFocus, Inc.

151-2SCO003 Issued: 11/15/94 Type: Native
 Product Supplier: **The Santa Cruz Operation, Inc.**
 Product: **SCO UNIX®, Release 3.2, Version 4.2, with SCO MPX Multi-processor extension Release 3.0**
 PCD: SCO UNIX® System V/386 Release 3.2.4 POSIX.1
 Conformance Document, October 1994
 GTI - Supported by Product MC - Not Provided by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Compaq Computer Corporation
 Computer Hardware Product: Compaq ProLiant 2000, Model 5/90
 C Compiler: SCO ODT Development System Release 3.0 C Compiler, with SCO XPG4 Supplement, Release 1.0
 APTL: 100343 DataFocus, Inc.

151-2SCO004 Issued: 11/15/94 Type: Native
 Product Supplier: **The Santa Cruz Operation, Inc.**
 Product: **SCO UNIX®, Release 3.2, Version 4.2**
 PCD: SCO UNIX® System V/386 Release 3.2.4 POSIX.1 Conformance Document, October 1994
 GTI - Supported by Product MC - Not Provided by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Compaq Computer Corporation
 Computer Hardware Product: Compaq ProLiant 2000, Model 5/90
 C Compiler: SCO ODT Development System Release 3.0 C Compiler, with SCO XPG4 Supplement, Release 1.0
 APTL: 100343 DataFocus, Inc.

151-2SCO005 Issued: 11/15/94 Type: Native
 Product Supplier: **The Santa Cruz Operation, Inc.**
 Product: **SCO UNIX®, Release 3.2, Version 4.2**
 PCD: SCO UNIX® System V/386 Release 3.2.4 POSIX.1 Conformance Document, October 1994
 GTI - Supported by Product MC - Not Provided by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Compaq Computer Corporation
 Computer Hardware Product: Compaq ProLiant 1000, Model 486DX2/66
 C Compiler: SCO ODT Development System Release 3.0 C Compiler, with SCO XPG4 Supplement, Release 1.0
 APTL: 100343 DataFocus, Inc.

151-2SCO006 Issued: 11/15/94 Type: Native
 Product Supplier: **The Santa Cruz Operation, Inc.**
 Product: **SCO UNIX®, Release 3.2, Version 4.2**
 PCD: SCO UNIX® System V/386 Release 3.2.4 POSIX.1 Conformance Document, October 1994
 GTI - Supported by Product MC - Not Provided by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: American Megatrends, Inc.
 Computer Hardware Product: AMI SBS 6400 Super Voyager VLB-III, Intel 486DX4/100
 C Compiler: SCO ODT Development System Release 3.0 C Compiler, with SCO XPG4 Supplement, Release 1.0
 APTL: 100343 DataFocus, Inc.

151-2SCO007 Issued: 11/23/94 Type: Native
 Product Supplier: **The Santa Cruz Operation, Inc.**
 Product: **SCO UNIX®, Release 3.2, Version 4.2**
 PCD: SCO UNIX® System V/386 Release 3.2.4 POSIX.1 Conformance Document, October 1994
 GTI - Supported by Product MC - Not Provided by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Microlog Corporation
 Computer Hardware Product: Intel R100, Intel 486DX33
 C Compiler: SCO ODT Development System Release 3.0 C Compiler, with SCO XPG4 Supplement, Release 1.0
 APTL: 100343 DataFocus, Inc.

151-2SCO008 Issued: 11/23/94 Type: Native
 Product Supplier: **The Santa Cruz Operation, Inc.**
 Product: **SCO UNIX®, Release 3.2, Version 4.2**
 PCD: SCO UNIX® System V/386 Release 3.2.4 POSIX.1 Conformance Document, October 1994
 GTI - Not Provided by Product MC - Not Provided by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Microlog Corporation
 Computer Hardware Product: Intel R100, Intel Pentium™/66
 C Compiler: SCO ODT Development System Release 3.0 C Compiler, with SCO XPG4 Supplement, Release 1.0
 APTL: 100343 DataFocus, Inc.

NIST POSIX VALIDATED PRODUCTS, *Continued*

151-2SCO009 Issued: 4/14/95 Type: Native
 Product Supplier: **The Santa Cruz Operation, Inc.**
 Product: **SCO UNIX[®], Release 3.2, Version 4.2 with SCO XPG4 Supplement Release 1.0.0**
 PCD: SCO UNIX[®] System V/386 Release 3.2.4 POSIX.1
 Conformance Document, May 1995
 GTI - Supported by Product MC - Not Provided by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Tandem Computers Incorporated
 Computer Hardware Product: 20-slot 48-port digital VRU, order number VR204801
 C Compiler: SCO UNIX[®] Development System Release 3.2v4.2
 APTL: 100342 Mindcraft, Inc.

151-2SEQ001 Issued: 04/12/94 Type: Native
 Product Supplier: **Sequent Computer Systems Inc.**
 Product: **DYNIX/ptx Version 4.0.0**
 PCD: DYNIX/ptx POSIX.1 Conformance Specification Part Number 1003-49622-04
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sequent Computer Systems Inc.
 Computer Hardware Product: Sequent Symmetry Systems SE20
 C Compiler: ptx/C (Version 4.0.0)
 APTL: 100342 Mindcraft, Inc.

151-2SEQ002 Issued: 04/12/94 Type: Native
 Product Supplier: **Sequent Computer Systems Inc.**
 Product: **DYNIX/ptx Version 2.1.1**
 PCD: DYNIX/ptx POSIX.1 Conformance Specification Part Number 1003-49622-03a
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sequent Computer Systems Inc.
 Computer Hardware Product: Sequent Symmetry Systems SE60
 C Compiler: ptx/C (Version 2.1.1)
 APTL: 100342 Mindcraft, Inc.

151-2SGI001 Issued: 03/07/95 Type: Native
 Product Supplier: **Silicon Graphics, Inc.**
 Product: **IRIX 5.3 with patches 278, 279, and 280**
 PCD: IRIX 5.3 POSIX.1 Conformance Document
 GTI - Supported by Product MC - Not provided by product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Silicon Graphics, Inc.
 Computer Hardware Product: Indigo 2
 C Compiler: IRIX Development Option 5.3 (SC4-IDO-5.3)
 APTL: 100342 Mindcraft, Inc.

151-2SGI002 Issued: 03/07/95 Type: Native
 Product Supplier: **Silicon Graphics, Inc.**
 Product: **IRIX 5.3 with patches 278, 279, and 280**
 PCD: IRIX 5.3 POSIX.1 Conformance Document
 GTI - Supported by Product MC - Not provided by product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Silicon Graphics, Inc.
 Computer Hardware Product: Indy
 C Compiler: IRIX Development Option 5.3 (SC4-IDO-5.3)
 APTL: 100342 Mindcraft, Inc.

151-2SGI003 Issued: 03/07/95 Type: Native
 Product Supplier: **Silicon Graphics, Inc.**
 Product: **IRIX 5.3 with patches 278, 279, and 280**
 PCD: IRIX 5.3 POSIX.1 Conformance Document
 GTI - Supported by Product MC - Not provided by product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Silicon Graphics, Inc.
 Computer Hardware Product: Challenge L
 C Compiler: IRIX Development Option 5.3 (SC4-IDO-5.3)
 APTL: 100342 Mindcraft, Inc.

151-2SGI004 Issued: 03/07/95 Type: Native
 Product Supplier: **Silicon Graphics, Inc.**
 Product: **IRIX 5.3 with patches 278, 279, and 280**
 PCD: IRIX 5.3 POSIX.1 Conformance Document
 GTI - Supported by Product MC - Not provided by product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Tandem Computers Incorporated
 Computer Hardware Product: Integrity NR4404
 C Compiler: IRIX Development Option 5.3 (SC4-IDO-5.3)
 APTL: 100342 Mindcraft, Inc.

151-2SGI005 Issued: 03/07/95 Type: Native
 Product Supplier: **Silicon Graphics, Inc.**
 Product: **IRIX 5.3 with patches 278, 279, and 280**
 PCD: IRIX 5.3 POSIX.1 Conformance Document
 GTI - Supported by Product MC - Not provided by product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Tandem Computers Incorporated
 Computer Hardware Product: Integrity NR401
 C Compiler: IRIX Development Option 5.3 (SC4-IDO-5.3)
 APTL: 100342 Mindcraft, Inc.

151-2SRA001 Issued: 08/02/95 [07/07/95] Type: Native
 Product Supplier: **Stratus Computer, Inc.**
 Product: **FTX 2.3.0.c.2**
 PCD: FTX 2.3.0.c.2 POSIX.1 Conformance Document, published June 13, 1995
 GTI - Supported by Product MC - Supported by product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Stratus Computer, Inc.
 Computer Hardware Product: XA/R model 35
 C Compiler: Stratus Standard C Development Environment 5.0
 APTL: 100342 Mindcraft, Inc.

151-2SUN001 Issued: 12/23/93 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **Solaris 2.3 with patch 101294-01**
 PCD: Solaris 2.3 Standards Conformance Guide, Chapter 5: POSIX 1 Part No: 801-5263-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation, Inc.
 Computer Hardware Product: SPARCcenter 2000, model 2204
 C Compiler: Sun C Compiler Version 2.0.1, Released Oct. 3, 1992
 APTL: 100342 Mindcraft, Inc.

NIST POSIX VALIDATED PRODUCTS, *Continued*

151-2SUN002 Issued: 12/23/93 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **Solaris 2.3 with patch 101294-01**
 PCD: Solaris 2.3 Standards Conformance Guide, Chapter 5: POSIX.1
 Part No: 801-5263-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation, Inc.
 Computer Hardware Product: SPARCstation 10SX, model 40
 C Compiler: Sun C Compiler Version 2.0.1, Released Oct. 3, 1992
 APTL: 100342 Mindcraft, Inc.

151-2SUN003 Issued: 12/23/93 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **Solaris 2.3 with patch 101294-01**
 PCD: Solaris 2.3 Standards Conformance Guide, Chapter 5: POSIX.1
 Part No: 801-5263-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation, Inc.
 Computer Hardware Product: SPARCstation 10, model 52
 C Compiler: Sun C Compiler Version 2.0.1, Released Oct. 3, 1992
 APTL: 100342 Mindcraft, Inc.

151-2SUN004 Issued: 12/23/93 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **Solaris 2.3 with patch 101294-01**
 PCD: Solaris 2.3 Standards Conformance Guide, Chapter 5: POSIX.1
 Part No: 801-5263-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation, Inc.
 Computer Hardware Product: SPARCserver 670MP, model 54
 C Compiler: Sun C Compiler Version 2.0.1, Released Oct. 3, 1992
 APTL: 100342 Mindcraft, Inc.

151-2SUN005 Issued: 3/30/94 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **Solaris 2.3 Edition II with patch 101294-01 and 101498-02**
 PCD: Solaris 2.3 Standards Conformance Guide, Chapter 5: POSIX.1
 Part No: 801-5263-11
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation, Inc.
 Computer Hardware Product: SPARCstation 5
 C Compiler: Sun C Compiler Version 2.0.1, Released Oct. 3, 1992
 APTL: 100342 Mindcraft, Inc.

151-2SUN006 Issued: 3/30/94 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **Solaris 2.3 Edition II**
 PCD: Solaris 2.3 Standards Conformance Guide Chapter 5: POSIX.1
 Part No: 801-5263-11
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation, Inc.
 Computer Hardware Product: SPARCstation Voyager
 C Compiler: Sun C Compiler Version 2.0.1, Released Oct. 3, 1992
 APTL: 100342 Mindcraft, Inc.

151-2SUN007 Issued: 3/30/94 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **Solaris 2.3 Release with patches 101294-01, 101318-27, and 101493-01**
 PCD: Solaris 2.3 Standards Conformance Guide, Chapter 5: POSIX.1 Part No: 801-5263-11
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation, Inc.
 Computer Hardware Product: SPARCstation 20, Model 502
 C Compiler: Sun C Compiler Version 2.0.1, Released Oct. 3, 1992
 APTL: 100342 Mindcraft, Inc.

151-2SUN008 Issued: 9/07/94 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **The INTERACTIVE UNIX Operating System, Version 4.1**
 PCD: INTERACTIVE UNIX System V/386 Release 3.2 Standards Conformance Guide, June, 1994
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Compaq
 Computer Hardware Product: Proliant 2000 Model 5/66-1
 C Compiler: LPI C Version 2.0
 APTL: 100342 Mindcraft, Inc.

151-2SUN009 Issued: 9/07/94 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **Solaris 2.3 with patch 101294-01**
 PCD: Solaris 2.3 Standards Conformance Guide, Chapter 5: POSIX.1 Part No: 801-5263-11
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Axil Workstations
 Computer Hardware Product: Axil model 220 Professional
 C Compiler: gcc version cygnus-2.3.3
 APTL: 100342 Mindcraft, Inc.

151-2SUN010 Issued: 9/07/94 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **Solaris 2.3 with patch 101294-01**
 PCD: Solaris 2.3 Standards Conformance Guide, Chapter 5: POSIX.1 Part No: 801-5263-11
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Axil Workstations
 Computer Hardware Product: Axil model 311-4.0
 C Compiler: gcc version cygnus-2.3.3
 APTL: 100342 Mindcraft, Inc.

151-2SUN011 Issued: 10/13/94 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **Solaris 2.4**
 PCD: SunSoft Standards Conformance Reference Manual, August 1994
 Part No: 801-6735-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation
 Computer Hardware Product: SPARCserver 1000
 C Compiler: Sun C Compiler Version 2.0.1, Released Oct. 3, 1992
 APTL: 100342 Mindcraft, Inc.

NIST POSIX VALIDATED PRODUCTS, *Continued*

151-2SUN012 Issued: 10/13/94 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **Solaris 2.4**
 PCD: SunSoft Standards Conformance Reference Manual, August 1994 Part No: 801-6735-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Dell Computer Corporation
 Computer Hardware Product: 466T
 C Compiler: ProCompiler C Version 2.0.1 for x86
 APTL: 100342 Mindcraft, Inc.

151-2SUN013 Issued: 10/13/94 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **Solaris 2.4**
 PCD: SunSoft Standards Conformance Reference Manual, August 1994 Part No: 801-6735-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation
 Computer Hardware Product: SPARCstation LX model 4/30
 C Compiler: Sun C Compiler Version 2.0.1, Released Oct. 3, 1992
 APTL: 100342 Mindcraft, Inc.

151-2SUN014 Issued: 10/13/94 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **Solaris 2.4**
 PCD: SunSoft Standards Conformance Reference Manual, August 1994 Part No: 801-6735-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation
 Computer Hardware Product: SPARCserver 670MP
 C Compiler: Sun C Compiler Version 2.0.1, Released Oct. 3, 1992
 APTL: 100342 Mindcraft, Inc.

151-2SUN015 Issued: 10/13/94 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **Solaris 2.4**
 PCD: SunSoft Standards Conformance Reference Manual, August 1994 Part No: 801-6735-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation
 Computer Hardware Product: SPARCstation 10, model 52
 C Compiler: Sun C Compiler Version 2.0.1, Released Oct. 3, 1992
 APTL: 100342 Mindcraft, Inc.

151-2SUN016 Issued: 10/13/94 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **Solaris 2.4**
 PCD: SunSoft Standards Conformance Reference Manual, August 1994 Part No: 801-6735-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation
 Computer Hardware Product: SPARCstation 2 model 4/75
 C Compiler: Sun C Compiler Version 2.0.1, Released Oct. 3, 1992
 APTL: 100342 Mindcraft, Inc.

151-2SUN017 Issued: 10/13/94 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **Solaris 2.3 with patch 101294-01**
 PCD: Solaris 2.3 Standards Conformance Guide, Chapter 5: POSIX.1 Part No: 801-5263-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Axil Workstations
 Computer Hardware Product: Axil model 311-5.1
 C Compiler: gcc version cygnus-2.3.3
 APTL: 100342 Mindcraft, Inc.

151-2SUN018 Issued: 10/13/94 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **Solaris 2.3 with patch 101294-01**
 PCD: Solaris 2.3 Standards Conformance Guide, Chapter 5: POSIX.1 Part No: 801-5263-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Axil Workstations
 Computer Hardware Product: Axil model 311-5.2
 C Compiler: gcc version cygnus-2.3.3
 APTL: 100342 Mindcraft, Inc.

151-2SUN019 Issued: 01/24/95 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **Solaris 2.4 Hardware: 11/94 Plus SMCC Hardware: 11/94 Updates**
 PCD: SunSoft Standards Conformance Reference Manual, August, 1994 Part No: 801-6735-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation
 Computer Hardware Product: SPARCcenter 2000E
 C Compiler: Sun C Compiler Version 2.0.1, Released Sep. 3, 1992
 APTL: 100342 Mindcraft, Inc.

151-2SUN020 Issued: 01/24/95 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **Solaris 2.4 Hardware: 11/94 Plus SMCC Hardware: 11/94 Updates**
 PCD: SunSoft Standards Conformance Reference Manual, August, 1994 Part No: 801-6735-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation
 Computer Hardware Product: SPARCstation 5 model 85
 C Compiler: Sun C Compiler Version 2.0.1, Released Sep. 3, 1992
 APTL: 100342 Mindcraft, Inc.

151-2SUN021 Issued: 01/24/95 Type: Native
 Product Supplier: **SunSoft, Inc.**
 Product: **Solaris 2.4 Hardware: 11/94 Plus SMCC Hardware: 11/94 Updates**
 PCD: SunSoft Standards Conformance Reference Manual, August, 1994 Part No: 801-6735-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation
 Computer Hardware Product: SPARCstation Voyager
 C Compiler: Sun C Compiler Version 2.0.1, Released Sep. 3, 1992
 APTL: 100342 Mindcraft, Inc.

NIST POSIX VALIDATED PRODUCTS, *Continued*

151-2SUN022 Issued: 03/07/95 Type: Native
 Product Supplier: SunSoft, Inc.
 Product: Solaris 2.4 Hardware: 11/94 Plus SMCC Hardware: 11/94
Updates
 PCD: SunSoft Standards Conformance Reference Manual, August, 1994 Part No: 801-6735-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation
 Computer Hardware Product: SPARCstation 20 model HS11 plus SPARC module HS11
 C Compiler: Sun C Compiler Version 2.0.1, Released Sep. 3, 1992
 APTL: 100342 Mindcraft, inc.

151-2SUN023 Issued: 03/02/95 Type: Native
 Product Supplier: SunSoft, Inc.
 Product: Solaris 2.4 Hardware: 11/94 Plus SMCC Hardware: 11/94
Updates
 PCD: SunSoft Standards Conformance Reference Manual, August, 1994 Part No: 801-6735-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation
 Computer Hardware Product: SPARCstation 20 model 712MP
 C Compiler: Sun C Compiler Version 3.0.1, Released Jul. 13, 1994
 APTL: 100342 Mindcraft, inc.

151-2SUN024 Issued: 05/12/95 Type: Native
 Product Supplier: SunSoft, Inc.
 Product: Solaris 2.4 Hardware: 11/94 Plus SMCC Hardware: 11/94
Updates
 PCD: SunSoft Standards Conformance Reference Manual, August, 1994 Part No: 801-6735-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation
 Computer Hardware Product: SPARCstation 4 model 70
 C Compiler: Sun C Compiler Version 3.0.1, Released Jul. 13, 1994
 APTL: 100342 Mindcraft, inc.

151-2SUN025 Issued: 06/02/95 Type: Native
 Product Supplier: SunSoft, Inc.
 Product: Solaris 2.4 Hardware: 11/94 Plus SMCC Hardware: 11/94
Updates
 PCD: SunSoft Standards Conformance Reference Manual, August, 1994 Part No: 801-6735-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation
 Computer Hardware Product: SPARCstation 5 model 110
 C Compiler: Sun C Compiler Version 3.0.1, Released Jul. 13, 1994
 APTL: 100342 Mindcraft, inc.

151-2SUN026 Issued: 05/12/95 Type: Native
 Product Supplier: SunSoft, Inc.
 Product: Solaris 2.4
 PCD: SunSoft Standards Conformance Reference Manual, August, 1994 Part No: 801-6735-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Axil Computer, Inc.
 Computer Hardware Product: Axil 320 model 2H912
 C Compiler: gcc version cygnus-2.3.3
 APTL: 100342 Mindcraft, inc.

151-2SUN027 Issued: 06/02/95 Type: Native
 Product Supplier: SunSoft, Inc.
 Product: Solaris 2.4 Hardware: 11/94 Plus SMCC Hardware: 11/94
Updates
 PCD: SunSoft Standards Conformance Reference Manual, August, 1994 Part No: 801-6735-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation
 Computer Hardware Product: SPARCstation 4 model 85
 C Compiler: Sun C Compiler Version 2.0.1, Released Sep. 3, 1992
 APTL: 100342 Mindcraft, Inc.

151-2SUN028 Issued: 06/02/95 Type: Native
 Product Supplier: SunSoft, Inc.
 Product: Solaris 2.4 Hardware: 11/94 Plus SMCC Hardware: 11/94
Updates
 PCD: SunSoft Standards Conformance Reference Manual, August, 1994 Part No: 801-6735-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation
 Computer Hardware Product: SPARCstation 20 model HS14
 C Compiler: Sun C Compiler Version 3.0.1, Released Jul. 13, 1994
 APTL: 100342 Mindcraft, Inc.

151-2SUN029 Issued: 06/02/95 Type: Native
 Product Supplier: SunSoft, Inc.
 Product: Solaris 2.4 Hardware: 11/94 Plus SMCC Hardware: 11/94
Updates
 PCD: SunSoft Standards Conformance Reference Manual, August, 1994 Part No: 801-6735-10
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Sun Microsystems Computer Corporation
 Computer Hardware Product: SPARCstation 20 model HS22
 C Compiler: Sun C Compiler Version 3.0.1, Released Jul. 13, 1994
 APTL: 100342 Mindcraft, inc.

151-2TAN001 Issued: 05/12/95 Type: Native
 Product Supplier: Tandem Computers Incorporated
 Product: Tandem NonStop Kernel Release D30, product SA73 and Open System Services Run-Time Environment, product SA16 with IPMs T6533AAE, T8373AAB, T8305AAB, T8371AAB, and T8372AAB and Open Internationalization with Single- and Multi-Byte Locales, product SA08 and Tandem NonStop TCP/IP with the Telserv TELNET Server product SD20
 PCD: Open System Services Conformance document for POSIX.1, Third Edition
 GTI - Not provided by Product MC - Not provided by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Tandem Computers Incorporated
 Computer Hardware Product: K10000
 C Compiler: NonStop Kernel Open System Services Development Environment Release D30, product SA02
 APTL: 100342 Mindcraft, Inc.

NIST POSIX VALIDATED PRODUCTS, *Continued*

151-2TAN002 Issued: 05/12/95 Type: Native
 Product Supplier: Tandem Computers Incorporated
 Product: Tandem NonStop Kernel Release D30, product SA73 and Open System Services Run-Time Environment, product SA16 with IPMs T6533AAE, T8373AAB, T8305AAB, T8371AAB and T8372AAB, and Open Internationalization with Single- and Multi-Byte Locales, product SA08 and Tandem NonStop TCP/IP with the Telserv TELNET Server product SD20
 PCD: Open System Services Conformance document for POSIX.1, Third Edition
 GTI - Not provided by Product MC - Not provided by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Tandem Computers Incorporated
 Computer Hardware Product: K1000
 C Compiler: NonStop Kernel Open System Services Development Environment Release D30, product SA02
 APTL: 100342 Mindcraft, Inc.

151-2TEN001 Issued: 10/25/94 Type: Hosted
 Product Supplier: Tenon Intersystems
 Product: MachTen Version 4.0.0
 PCD: MachTen POSIX.1 Conformance Document Release 1.0, October, 1994
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Apple Computer, Inc.
 Computer Hardware Product: Macintosh Quadra 630
 Host Operating System Supplier: Apple Computer, Inc.
 Host Operating System: MacOS 7.1.2P
 C Compiler: gcc 2.5.8
 APTL: 100342 Mindcraft, Inc.

151-2TEN002 Issued: 10/25/94 Type: Hosted
 Product Supplier: Tenon Intersystems
 Product: MachTen Version 4.0.0
 PCD: MachTen POSIX.1 Conformance Document Release 1.0, October, 1994
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Apple Computer, Inc.
 Computer Hardware Product: Macintosh PowerBook 520
 Host Operating System Supplier: Apple Computer, Inc.
 Host Operating System: MacOS 7.1.1
 C Compiler: gcc 2.5.8
 APTL: 100342 Mindcraft, Inc.

151-2TEN003 Issued: 11/08/94 Type: Hosted
 Product Supplier: Tenon Intersystems
 Product: MachTen Version 2.1.1
 PCD: MachTen POSIX.1 Conformance Document Release 1.0, October, 1994
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Apple Computer, Inc.
 Computer Hardware Product: Macintosh Quadra 630
 Host Operating System Supplier: Apple Computer, Inc.
 Host Operating System: MacOS 7.1.2P
 C Compiler: gcc 2.5.8
 APTL: 100342 Mindcraft, Inc.

151-2TEN004 Issued: 11/08/94 Type: Hosted
 Product Supplier: Tenon Intersystems
 Product: MachTen Version 2.1.1
 PCD: MachTen POSIX.1 Conformance Document Release 1.0, October, 1994
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Apple Computer, Inc.
 Computer Hardware Product: Macintosh PowerBook 520
 Host Operating System Supplier: Apple Computer, Inc.
 Host Operating System: MacOS 7.1.1
 C Compiler: gcc 2.5.8
 APTL: 100342 Mindcraft, Inc.

151-2UNI001 Issued: 12/02/93 Type: Native
 Product Supplier: Unisys Corporation
 Product: Unix System V Release 4 Revision 1.2
 PCD: UNIX System V Release 4.0 POSIX Conformance Programmer's Guide
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Unisys Corporation
 Computer Hardware Product: Unisys U6000 Series U6000/65
 C Compiler: Unix System V Release 4 Standard C Development Environment Rev. 1.2
 APTL: 100342 Mindcraft, Inc.

151-2UNI002 Issued: 12/02/93 Type: Native
 Product Supplier: Unisys Corporation
 Product: Unix System V Release 4 Revision 1.2
 PCD: UNIX System V Release 4.0 POSIX Conformance Programmer's Guide
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Unisys Corporation
 Computer Hardware Product: Unisys U6000 Series U6000/300
 C Compiler: Unix System V Release 4 Standard C Development Environment Rev. 1.2
 APTL: 100342 Mindcraft, Inc.

151-2UNI003 Issued: 11/15/94 Type: Native
 Product Supplier: Unisys Corporation
 Product: DYNIX/ptx Release 4.0.0
 PCD: DYNIX/ptx POSIX.1 Conformance Specification Part Number: 7441 0861-000
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Unisys Corporation
 Computer Hardware Product: U6000/600 Model60
 C Compiler: ptx/C 4.0.0
 APTL: 100342 Mindcraft, Inc.

151-2UNI004 Issued: 11/17/94 Type: Native
 Product Supplier: Unisys Corporation
 Product: Unix System V Release 4 Revision 1.3
 PCD: UNIX System V Release 4.0 POSIX Conformance Programmer's Guide Part Number: 3914 9430-400
 GTI - Supported by Product MC - Supported by Product
 MFS - Supported by Product AP - Supported by Product
 Computer Hardware Supplier: Unisys Corporation
 Computer Hardware Product: U6000/430
 C Compiler: Unix System V Release 4 Standard C Development Environment, Rev. 1.3
 APTL: 100342 Mindcraft, Inc.

NIST POSIX VALIDATED PRODUCTS, *Continued*

151-2UNI005 Issued: 11/17/94 Type: Native

Product Supplier: **Unisys Corporation**

Product: **Unix System V Release 4 Revision 1.3**

PCD: **UNIX System V Release 4.0 POSIX Conformance Programmer's**

Guide Part Number: 3914 9430-400

GTI - Supported by Product MC - Supported by Product

MFS - Supported by Product AP - Supported by Product

Computer Hardware Supplier: **Unisys Corporation**

Computer Hardware Product: **U6000/500 Model 50**

C Compiler: **Unix System V Release 4 Standard C Development**

Environment, Rev. 1.3

APTL: 100342 Mindcraft, Inc.

151-2UNI006 Issued: 07/07/95 Type: Native

Product Supplier: **Unisys Corporation**

Product: **SVR4/MK Version 1.0**

PCD: **Unisys SVR4/MK POSIX Conformance Guide, Part Number**

7436 7848-000

GTI - Not Provided by Product MC - Not provided by Product

MFS - Supported by Product AP - Supported by Product

Computer Hardware Supplier: **Unisys Corporation**

Computer Hardware Product: **Opus**

C Compiler: **Optimizing C Compilation System Issue 3.0**

APTL: 100342 Mindcraft, Inc.

For further information on the NIST/CSL POSIX validation program contact Martha M. Gray, Computer Systems Laboratory, B266 Technology Bldg., NIST, Gaithersburg, MD 20899. Telephone: 301-975-3276, fax: 301-590-0932, e-mail: gray@sst.ncsl.nist.gov.

This register is also available on an electronic mail (email) file server system. To use the service, you must be able to send and receive email via the Internet. For most email systems, send an email message (mail_posix@nist.gov) with the first line of the message containing a command to send_151-2reg and a carriage return. The next line should simply end your email message (on some systems a period and a carriage return). This register will be returned via email to your email address. There is also a register for FIPS 151-1 accredited laboratories and validated products. For this register use the command send_151-1reg.

For further information on the NIST/CSL POSIX validation program contact Martha M. Gray, Computer Systems Laboratory, B266 Technology Bldg., NIST, Gaithersburg, MD 20899. Telephone: 301-975-3276, fax: 301-590-0932, e-mail: gray@sst.ncsl.nist.gov.

This register is also available on an electronic mail (email) file server system. To use the service, you must be able to send and receive email via the Internet. For most email systems, send an email message (mail_posix@nist.gov) with the first line of the message containing a command to send_151-2reg and a carriage return. The next line should simply end your email message (on some systems a period and a carriage return). This register will be returned via email to your email address. There is also a register for FIPS 151-1 accredited laboratories and validated products. For this register use the command send_151-1reg.



6. COMPUTER SECURITY TESTING

6.1 Cryptographic Standards

The lists in Sections 6.6, 6.7 and 6.8 provide technical information about products that have been validated as conforming to the following computer security FIPS:

- a. Data Encryption Standard (DES), FIPS PUB 46-2,
- b. Message Authentication Code (MAC), FIPS PUB 113, and
- c. Key Management Using ANSI X9.17, FIPS PUB 171.

6.2 Data Encryption Validation Tests

FIPS PUB 46-2 specifies a cryptographic algorithm that converts plaintext to ciphertext using a 56-bit key. Testing procedures for the validation of devices as conforming to FIPS PUB 46-2 are described in the NBS Special Publication 500-20, Validating the Correctness of Hardware Implementations of the NBS Data Encryption Standard. The validation of a device is performed by running the Monte Carlo test described in the publication. The Monte-Carlo test consists of eight million encryptions and four million decryptions, with two encryptions and one decryption making up a single test. The test is designed to use the Electronic Codebook Mode (ECB) of DES. Although the actual test described in NBS Special Publication 500-20 is the same test used to validate devices today, the procedures for administering the test have changed. Currently, the test is performed by the vendor using initial values supplied by NIST. The vendor uses the supplied information to run the Monte-Carlo test and sends the results to NIST.

6.3 Message Authentication Code (MAC) Validation System

FIPS PUB 113, Computer Data Authentication, specifies a Data Encryption Algorithm which may be used to detect unauthorized intentional and accidental modifications to data. This process is known as data authentication. The algorithm is based on DES and is used to authenticate an entire binary message. FIPS PUB 113 is compatible with ANSI X9.9 which provides methods for authenticating an entire binary message as well as all or parts of a message which are in a coded character format. Procedures for the validation of products which implement FIPS PUB 113 and ANSI X9.9 are described in NBS Special Publication 500-156, Message Authentication Code (MAC) Validation System: Requirements and Procedures.

6.4 Key Management Validation System (KMVS)

FIPS PUB 171 adopts ANSI X9.17 for Federal Government use. ANSI X9.17, Financial Institution Key Management (Wholesale), provides procedures and protocols for the secure generation, distribution, storage, entry, use and destruction of symmetric cryptographic keying material (e.g., DES). It provides key management solutions for a variety of operational environments, and as such, ANSI X9.17 contains a number of options. FIPS PUB 171 specifies a particular set of options whenever keying material is distributed using the protocols of ANSI X9.17. Procedures for the validation of products which conform to a subset of the options selected in FIPS PUB 171 are described in the Key Management Validation System: Point-to-Point Validation System document which is available from the Manager of the Security Group (see Section 6.5).

6.5 General

6.5.1 Request for Validation

To validate a product, a vendor should send a formal request for validation which includes a clear indication of the product to be tested. The request must also include the name, address, and telephone number of the person within the vendor's organization who will be responsible for the validation testing. The request should be sent to:

Manager, Security Technology Group
Computer Security Division
National Computer Systems Laboratory
Building 225, Room A216
National Institute of Standards and Technology
Gaithersburg, MD 20899
Telephone (301) 975-2920

6.5.2 Information about Validated Products

It should be noted that the purpose of the following lists (see Sections 6.6, 6.7 and 6.8) is to provide technical information about products that have been validated as conforming to the FIPS Standards listed in Section 6.1. NIST has made every attempt to provide complete and accurate information about the products described in the following lists. However, due to the possibility of changes made within individual companies, NIST cannot guarantee that this document reflects the current status of each product.

6.5.3 Validation Documentation

Copies of the above FIPS and Special Publications are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161. The KMVS validation requirements document discussed in Section 6.4 can be obtained by contacting the Manager of the Security Technology Group at the above address.

6.6 DES Validated Devices

NOTE: The purpose of this document is to provide technical information about devices that have been validated as conforming to Federal Information Processing Standard Publication 46-2, Data Encryption Standard. The National Institute of Standards and Technology (NIST) has made every attempt to provide complete and accurate information about the devices described in this document. However, due to the possibility of changes made within individual companies, NIST cannot guarantee that this document reflects the current status of each product.

MANUFACTURER ADDRESS	PRODUCT	VALIDATION DATE	DESCRIPTION
ADT Security Systems 2560 Huntington Avenue Fourth Floor Alexandria, VA 22303 -Hal Marriott (703) 960-8548	ADT Universal	10/17/90	Chip is an on-board component for Communicator products in the High Security Intrusion Detection System. System has integrated key management capabilities.
Advanced Engineering Concepts, Inc. 1198 Pacific Coast Highway #D-505 Seal Beach, CA 90740 -Mark Olson (310) 379-1189	MODEM LOCK version 1.0 (firmware) and KEYXL8 version 1.0 (software) (Encryption Only)	5/26/94	MODEM LOCK/KEYXL8 is a firmware/software combination that is intended to be connected between a computer and an external modem; encrypts the modem data stream; works with most computers and most common existing modems; weighs 8oz, small enough for a shirt pocket, runs up to 40 hours on a 9-volt battery, also has an AC adapter.
	MODEM LOCK version 1.2 (firmware) and Key XL8 version 1.2 (software) (Encryption Only)	3/30/95	Same as version 1.0 above; provides throughput of up to 1920 characters per second.
Advanced Micro Devices, Inc. 4115 Freiderich Lane Mail Stop 135 Austin, TX 78744 -Patrick Soheili (408) 749-2161	AmZ8068 (also known as Am9518)	1/28/81	One 40-pin DIP package; n-channel Si-gate technology; ECB, CBC and 8-bit CFB modes; separate ports for key input, clear data and enciphered data; concurrent input, output and ciphering activities; external DMA control; interfaces with AmZ8000 CPU bus directly, and with the 2900, 8080, 8085 and 8048 families with minimum throughput greater than 1 Mbytes per second; greater than 1 Mbytes per second.
	AM 9568	2/28/84	N-channel silicon gate LSI product containing the circuitry necessary to encrypt and decrypt data; can be used in dedicated controllers, communication concentrators, terminals and peripheral task processors in general processor systems; can be used in CFB, ECB, or CBC operating modes; separate ports for key input, clear data, and enciphered data enhanced security; interface directly to the IAPX86, 88 bus; interfaces with 2900 and 8051 families with minimal external logic.
Algorithmic Research, Ltd. 15 Gush Etzion Street 54030 Givat Shmuel, Israel -Mr. Ilan Zisser 972+3+532-2799	AR DES - Intel 80x86 (software)	6/23/95	This module provides a very fast implementation of the DES, which can be used by most operating systems that run on Intel 80x86 machines. It is used in the AR family of products, including Diskrete, Crypto3270, CryptoLAN, CryptoCom, CryptoMail, CryptoKit, CrystoServer, and CryptoSafe.
American Telephone and Telegraph Company (AT&T) 6612 E. 75th Street P.O. Box 1008 Indianapolis, IN 46206 -Ken Zempol (908) 658-6870	AT&T Smart Card Version 2.11/DES	5/3/91	Card is part of a smart card based Computer Security System (CSS). The card is carried by an authorized user and permits the user to gain access to host computer systems that are protected by the CSS.
	AT&T Smart Card Version 3.0/DES (SE1)	7/19/91	This version of the AT&T Smart Card is designed to closely follow developments in the international standards arena in areas of card communication protocols, commands and file structures. It is a general purpose smart card that supports multiple applications and uses the DES as a basic part of its operating system.

DES Validated Devices, *Continued*

MANUFACTURER ADDRESS	PRODUCT	VALIDATION DATE	DESCRIPTION
American Telephone and Telegraph AT&T Guilford Center I-85 & Mt. Hope Church Road McLeansville, NC 27420 -B.F. Bailey (910) 279-3779 -M. Zugay (910) 279-3779	AT&T Mark E DES Key Generator, PN ON493049-1X	6/3/92	Not Available
	AT&T Mark ET DES Key Generator Part No. AN10014-1	11/2/92	Not Available
The Analytic Sciences Corporation 700 Boulevard South, Suite 201 Huntsville, AL 35802 -James Moore (205) 726-6718	DESafe version 1.0 (software)	8/26/94	DESafe is integrated with a commercial Bulletin Board System (BBS) to protect information during transmission to and from the BBS. DESafe permits cleartext file storage on the BBS by performing encryption/decryption "on the fly" during the file transfer. A stand-alone version of DESafe is employed by BBS users to decrypt (encrypt) downloaded (uploaded) files.
AT&T Whippany Road Whippany, N.J. 07981 -William Oeschger (201) 898-1198	AT&T T7000A Digital Encryption Processor	4/22/86	Manufactured using CMOS technology; 40-pin DIP; encryption modes include ECB, CBC, CFB, and OFB; throughput 1.882 Mbytes/second on-chip RAM and ROM program memory.
AT&T Bell Laboratories 25 Lindsley Drive Room 2B-309 Morristown, N.J. 07960 -William Oeschger (201) 898-1198	DEP229ER (WE229ER)	9/6/83	3.5 micron NMOS technology; 40-pin DIP; encryption modes - ECB, CBC, OFB, CFB1, CFB8, CFB64; throughput rate of 117K ciphering operation/second.
Arkansas Systems Inc. 8901 Kanis Road Little Rock, AR 72205-6498 -David H. Bishop (501) 227-8471	DES-MATE	7/6/89	Provides data encryption for messages sent and received on-line between an ATM/EFT Network switch processor and an IBM host participant in that network. DES key management is automatic and under system control.
Bokler Software Corporation 1570 Pacheco, Suite E-4 Santa Fe, NM 87505 -R.D. Moore	DEScipher/VBX 1.1 (software)	8/17/95	A modular, re-usable DEC implementation packaged as a Visual Basic control (VBX); can be used in Visual Basic or C++ applications; supports all 4 DEC modes, all VB data types, and multiple instantiation.
Burroughs Corporation Federal and Special Systems Group P.O. Box 517 Paoli, PA 19301 (215) 648-2556	PN 2664-9723	3/16/78	Not Available
Chase Manhattan Bank, N.A. 199 Water Street 12th Floor New York, New York 10081	Chase Encryption Device 1	7/24/84	Not Available
Collins Telecommunications Collins Defense Communications 350 Collins Road, NE Mail Stop 120-105 Cedar Rapids, Iowa 52498 -Jim Perkins 395-5773	765-5914-001 Voice Privacy Device VP430	10/15/77 10/6/81	pMOS chip with 40 μ sec algorithm execution time; chip has approximately a 50 nsec state change; can perform I/O functions while the chip is in operation; part of network stand-alone encryptor. Imbedded encryption device for commercial hand-held (319) (310) communications devices.

DES Validated Devices, *Continued*

MANUFACTURER ADDRESS	PRODUCT	VALIDATION DATE	DESCRIPTION
Computer Elektronik Infosys of America 512-A Herndon Parkway Herndon, VA 22070 -A. Mark Brown (703) 435-3800	SuperCrypt	7/24/91	Chip designed for high speed (12 Megabytes/sec data rates) encryption and decryption. ECB, CBC, CFB and OFB modes of DES supported as well as MAC generation. Available as a 120 Pin Flat Pack.
	CryptCard	1/12/93	CryptCard is an access control and DES encryption adapter for notebook PCs that have a PCMCIA slot.
Cottonwood Software 3448 Orange Street Los Alamos, NM 87544 -Jeffrey Saltzman (505) 661-6701	Cottonwood Software DES Class Library v. 1.05 (software)	8/26/94	Cottonwood Software DES Class Library v. 1.05 is available for license and is the basis of "Data Encryption Standard for Windows" (DES4WIN). DES4WIN offers an efficient, easy to use interface for the Data Encryption Standard within a Windows environment; portable format, clipboard or file encryption/decryption, and complete file erasure.
Cylink Corporation 110 South Wolfe Road Sunnyvale, California 94086 -Les Nightingill (408) 735-5800	CY1045	1/28/87	Not Available - Note: The device CY1045 was originally validated under the name CYDES45M.
	Cylink Faxdes	7/1/87	Not Available
	12035-001,DES52M	6/3/92	Not Available
	12422-001,DES2M1CFB	8/27/92	Not Available
Data Critical Corporation 120 N. Robinson, Suite 1520 Oklahoma City, OK 73102 -David Albert (405) 236-4441	DCCDES.LIB for DOS/WINDOWS (software)	1/18/95	The DCCDES.LIB modules for DOS/WINDOWS and OS/2 are both used in the Secure Page+ product line. Secure Page+ provides secure, reliable data transmission over existing paging networks; features Image-APB for Secure Broadcast of Images (Mug Shots, Missing Children, etc); provides the capability to send virtually any type of data to a hand-held, car-mounted or desktop computers over existing paging networks.
Datakey, Inc. 407 West Travelers Trail Burnsville, MN 55337-9990 -Michael Carenzo (612) 890-6850	H8-310 ASACS Smart Card	7/2/92	ASACS is an advanced smart card access control system designed jointly by Datakey, Inc. and the Security Technology Group at NIST. The ASACS hardware consists of a credit-card sized smart card with an embedded Hitachi H8/310 microprocessor and a reader/writer interface which provides an RS-232 serial connection to a host computer. The smart card functions are implemented in firmware which is stored in the memory of the card's microprocessor.
Docutel/Olivetti Corporation 106 Decker Court Suite 300 Irving, Texas 75062 Division of International Marketing (214) 550-5400	Docutel Nordisk Sparadata Cash Dispensing Terminal	6/20/82	Firmware implementation of DES in ROM for 106 PIN/communications security.
Ericsson G.E., Mobile Communications 1 Mountain View Road Lynchburg, VA 24502 -Dan Schwed (804) 948-6055	ADI DES revision 1.0	4/22/94	Software implementation of DES in OFB mode; Provides digital voice encryption for communications between mobile radios, portable radios, and dispatch control consoles in an EDACS Land Mobile Radio Communications System.
The Exchange 15395 SE 30th Place Bellevue, WA 98007 -Patricia Lenti-Crane (206) 644-7000	EXCRYPT DEB-64-KM (originally EXCLUDE DEB-64-KM)	1/26/89	Encrypts and decrypts data; generates random keys; supports up to six security processor boards that can be run in parallel to enhance throughput; has storage capacity for up to 4000 DES keys; developed for secure financial transactions.

DES Validated Devices, *Continued*

MANUFACTURER ADDRESS	PRODUCT	VALIDATION DATE	DESCRIPTION
Fairchild Semiconductor 2000 Century Plaza Columbia, MD 21044 Sales Department (301) 730-1510	9414 Chip Set	12/20/78	Bit-slice chip set mounted on a 9414 board with edge or ELCO connector; 4 chip set with 40 pins each; 2 bits of each byte are distributed to each chip; single 5V power supply; separate data inputs and outputs; ECB, CFB, and CBC modes of operation.
Front Line Software P.O. Box 217 Lowell, MA 01853 -William Graham (617) 452-3352	726-8064 PROM Device	12/1/86	4 K EPROM to be used with Intel IPAX family of microprocessors including all models of the IBM PC family; all modes of DES supported.
GEC-Marconi Limited Ltd. Brown's Lane, The Airport Portsmouth, Hampshire PO3 5PH England -Roger Madden Cycomm Corporation (703) 352-4741	DM800 (Encryption Only)	3/1/93	The DM800 is a module that can be added to an ordinary analogue radio in order to provide communication security by digital encryption.
GEMPLUS CARD International 656 Quince Orchard Road Suite 610 Gaithersburg, MD 20878 -Gilles Lisimaque (301) 990-8800	MCOS16K EEPROM/DES	3/18/91	A multi-application smart card which complies with the ISO standard 7816 (parts 1,2, and 3) for Integrated Circuit cards with contacts.
General Electric Company Mountain View Road Lynchburg, VA 24502 -Jim Elder (804) 948-6187	Part Number 19B801375	6/28/85	The GE DES IC is a microprocessor controlled, low speed asynchronous CMOS IC using DES. Intended to provide secure voice in commercial grade mobile radio applications.
Glenco Engineering, Inc. 270 Lexington Drive Buffalo Grove, IL 60089-6930 -D. Wade Clark (708) 808-0300	Glen-DES PN GL306051	5/8/92	The Glen-DES is a compact 20 pin design, using low power CMOS technology, operating at 3 μ s using a 16 MHz clock. The DES chip features nonvolatile internal memory, an external key and a combined key. It is available with a simple CPU interface and it supports both PCMCIA and DOS printer port implementations.
GTE Sylvania 77 "A" Street Needham Heights, MA 02194 -Harold Manley (617) 449-2000	Mark IV Firmware DES	2/27/79	Uses AMD-2901, 4-bit slice, bipolar uP.
IBM Corporation Federal Systems Division WK4/988 P.O. Box 100 Kingston, NY 12401 -Robert Elander (914) 385-6692	4402182 P/N 8270094 using DES Chip P/N 5898057 (originally 8269206)	11/1/77 8/25/78	This card used in terminal equipment; the chip uses technology with PLA control to implement CBC. This card is used in 3845 and 3846 equipment for 8-bit CFB.
	Two TTL cards - 8632242 and 8679176	9/21/79	Will operate at least at 1.5 Mbytes 360 channel rate; card set is used in 3848 cryptographic unit; uses "Emerald-5" technology.

DES Validated Devices, *Continued*

MANUFACTURER ADDRESS	PRODUCT	VALIDATION DATE	DESCRIPTION
IBM Corporation Branch Delivery Systems 8501 IBM Drive Charlotte, NC 28262-8563 -Todd Arnold (704) 594-8253 processor.	4754 Security Interface Unit and the Personal Security Card	10/10/90	Devices are used in a transaction security system to protect the privacy and integrity of data using a common cryptographic interface. The security interface unit communicates with the Personal Security Card and the cryptographic adaptor, if present. The Personal Security Card is an integrated-circuit chip card that contains a single chip security processor.
	IBM BDS Portable-C DES, version 1.0 (software)	7/1/94	Portable C-language implementation of DES, used in products developed by IBM Branch Delivery Systems.
IBM Corporation P.O. Box 950 Poughkeepsie, NY 12602 -Robert Granell (914) 435-5751	IBM ES/9000 Integrated Crypto-graphic Feature	2/26/93	The Integrated Cryptographic Feature is available for inclusion on the IBM ES/9000 processors in support of IBM's cryptographic architecture.
Information Security Corporation 1141 Lake Cook Rd., Suite D Deerfield, IL 60015 -Michael Markowitz (708) 405-0500	DES module/Intel, version 3.0 (software)	8/9/94	An extremely high speed module implemented in 386 assembly language. Used in SecretAgent for DOS, Windows and UNIX System V/386. Available as an object module library or DLL, or as one component of the AT&T Surity Cryptographic Development Kits on those platforms.
	DES module/68K, version 3.0 (software)	8/9/94	An extremely high speed module implemented in 68020 assembly language. Used in SecretAgent for Macintosh. Available as an object module library for MPW or Think C, or as one component of the AT&T Surity Cryptographic Development Kits for Macintosh.
	DES module/C, version 2.0 (software)	8/16/94	A portable DES module implemented in C/C++. Used in SecretAgent for UNIX (except on Intel platforms). Available as an object module library, or as one component of the AT&T Surity Cryptographic Development Kits for Sun, DEC, HP and other UNIX platforms.
Intel 1900 Praire City Road Folsom, CA 95630 -Joe Dragony (916) 351-5250	8294	1/3/78	Algorithm is microcode which is burned into a 1 Kbyte ROM on a 5 volt, 40-pin chip driven by a 8042 microprocessor.
	8294A	6/20/82	Same as the 8294 except for a maximum data transfer rate of 400 bytes per second.
John E. Holt & Associates 2714 Key Boulevard Arlington, VA 22201 -John Holt (703) 524-2923	Krypton Firmware	2/12/86	ROM chips for the standard IBM PC family include eight 3722 chips, four 2764 chips and one 27256 chip; 1024-bit CBC chaining; encryption speed dependent on clock of PC; ROM can plug directly into ROM slot.
Jones Futurex 3715 Atherton Road Rocklin, CA 95765 -Steve DeRosa (916) 632-3456	SAFE 300	8/12/93	The SAFE 300 is a stand-alone fax encryptor that provides both public network security and office privacy with automatic fax encryption, confidential fax mailbox, and misdial protection.

DES Validated Devices, *Continued*

MANUFACTURER ADDRESS	PRODUCT	VALIDATION DATE	DESCRIPTION
Lexicon ICOT Corporation 3801 Zanker Road P.O. Box 5143 San Jose, CA 95150-5143 -Bob Lynch (408) 433-3300	LEX-POS (Model 600)	11/28/84	A Personal Identification Number (PIN) entry device; used in conjunction with financial transaction devices, 16 key keyboard, 20 character display, RS-232 compatible; Lexicon sold LEX-POS to ICOT Corporation.
Logimens Inc. 759 Victoria Square Suite 310 Montreal, Quebec H2Y 2J7 -Normand Delisle (514) 288-5665	DESDLL.DLL 2.0 E/D Engine (software)	7/25/94	DESDLL.DLL is the software cryptoeengine for WinDES 2.0; WinDES provides easy to use encryption/decryption as well as other file protection features for pc-compatible systems running under MS Windows; supports drag & drop capabilities, file compression, Defense related secure file deletion, etc.
	PcDES 2.0 (software)	7/25/94	PcDES 2.0 (software) provides easy to use data encryption/decryption (manual and batch modes) as well as other file protection features for pc-compatible systems running under DOS; supports Defense-related secure file deletion, etc.
LSI Logic/Dataco AS Smedeholm 12-14 DK-2730 Herlev Denmark -Jens Kjelsbak 45 44 53 01 00	Dataco L5A4043 2030025402	1/12/90	Custom DES IC was manufactured by LSI Logic for Dataco. The DES chip is designed for optional use in ScaNet local area network products.
Matsushita Electronic Components Co. High Frequency Products Division One Panasonic Way Secaucus, NJ 07094 -Dursun Sakarya (201) 348-7767	EBC 1642 IC Card	3/13/91	Card is designed to be a high security external storage media housing an 8 bit CPU and 64 Kbit EEPROM.
Micro Card Technologies, Inc. 14070 Proton Road Dallas, TX 75244 -Jeff Lang (214) 788-4055	Micro Card TB100 Integrated Circuit Card	9/19/90	A multi-application integrated circuit card which can simultaneously support several application data files. Cipherring and deciphering functions may be used to encrypt or decrypt external messages using DES.
Morse Security Group, Inc. 12960 Bradley Avenue Sylmar, CA 91342-0128 -Nalin Chheda (800) 423-5669; (818) 367-5951	TRAP 5200 System	4/17/90	Touch response alarm processor system, including a receiver processor located in a data gathering center and a series of transponders located at remote locations, contains DES to produce encrypted data that flows along a communication path.
Motorola Microprocessor Products Division 6501 William Cannon Drive West Austin, TX 78735-8598 -Don Ponder (512) 440-2956	MC6859 (originally MGD68NE)	2/11/80	Si-gate depletion mode, nMOS 24-pin DIP using single 5 volt power supply; implements ECB and CFB.
Motorola 1309 East Algonquin Road Schaumburg, IL 60196 -James Osborn (312) 576-2251	T5W-2	11/12/81	Special purpose for internal use only.

DES Validated Devices, *Continued*

MANUFACTURER ADDRESS	PRODUCT	VALIDATION DATE	DESCRIPTION
-Kelly Mann (708) 576-3610	DES21X81V2.2 (firmware)	2/9/95	Implementation uses the PIC16C57 microcontroller from Microchip; operates in ECB, 64-bit CBC, and 64-bit OFB modes; this product will be used in secure radio systems to augment existing secure communications capabilities in Motorola Land Mobile Product Sector.
Newbridge Microsystems 603 March Road Kanata, Ontario K2K 2M5 DES Product Manager (613) 592-0714	CA95C	9/8/93	The CA95C Data Ciphering Processor implements the DES using the ECB, CFB, or CBC modes of operation. The CA95C provides a high throughput rate up to 11 Mbytes/second. Separate ports for key input, clear data and enciphered data are available.
	CA20C03A	4/10/91	A high performance WD20C03A compatible DES data encryption processor with data transfer rates up to 4 Mbytes per second. Supports electronic code book and cipher block chaining modes of operation. Battery backup capability of internal key register. PLCC and PDIP packaging available.
Newnet S.A. Alsina 430 Buenos Aires 1087 Argentina -Daniel Ramos 54 1 334 9732	Data Security Device (DSD 9612)	7/2/91	This device is based on an eight bit INTEL microprocessor with 8 Kbytes of EPROM. Transfer data at speeds of 1200 to 9600 bps and communicates with other devices via EIA RS-232-C ports.
Nixdorf Computer Corporation 168 Middlesex Turnpike Burlington, MA 01803 -Kevin Madden (617) 890-3600	VEM Module	1/7/80	The plug-in module is used with the Nixdorf 8864 CPU for encrypting data transmission blocks and file protection; may be used in terminal applications in the financial community; uses TTL.
Northern Telecom 3705 35th St. NE Calgary, Alberta T1Y 6C2 -Paul Provençal Bell Northern Research (613) 763-8014	BNR 64-bit Cipher Feedback Mode Module, version 1.0 (firmware)	7/19/94	The validated firmware is used in the PowerTouch 350 (Vista 350), an advanced screen telephone that connects to standard analog phone lines. PowerTouch 350 has an 8 line by 21 character display and supports the Bellcore ADSI protocol; uses the DES in 64-bit CFB mode to provide data encryption targeted for banking applications.
-Roland Lockhart Bell Northern Research, Ltd. (613) 763-5367	Entrust DES 32-2/64K Software Module, Version 1.1	9/13/94	DES 32-2/64K is used in the Entrust family of cryptographic products. Entrust provides encryption and digital signature services enterprise-wide, with fully automated key management that scales from small workgroups to 100,000+ users. Entrust is supported across platforms such as Windows, UNIX, Macintosh and mainframes.
Racal-Guardata Inc. 480 Spring Park Place Herndon, VA 22070 -Thomas J. Mitchell (703) 471-0892 (800) 521-6261	Datacryptor	1/7/80	Stand alone equipment with public key management remote distribution of master keys.

DES Validated Devices, *Continued*

MANUFACTURER ADDRESS	PRODUCT	VALIDATION DATE	DESCRIPTION
Research In Motion 180 Columbia Street West Waterloo, Ontario N2L 3L3 -Herb Little (519) 888-7465	Research In Motion DES Library, version 1.0 (software)	12/16/94	RIM DES Library is a software module DES implementation; it's intended to be used in a variety of wireless communication products such as portable terminals, point of sale equipment, and gateways to ensure privacy of user data.
Rothenbuhler Engineering P.O. Box 708 2191 Rhodes Road Sedro Woolley, WA 98284-0708 -Andrew Benson (206) 856-0836	CLS Series 5200 Encryption Module	3/19/91	The CLS Series 5200 Encryption Module is used in a system which communicates 8 channels of electronic security information between a client and a central monitoring facility.
Secur-Data Systems, Inc. Omega Center 7340 Executive Way, Suite R Frederick, MD 21701 -Ronald Baum (301) 698-9955	DESPLEX	2/2/89	Used in a CFB configuration as part of a firmware operating system for processing and transmission of alarm sensor data as well as receiving and annunciating data in an alarm monitoring facility.
Secure Computing Corporation 2675 Long Lake Road Roseville, MN 55113 -Ron Bohn (612) 628-2725	sctc_des.c, version 1.7	4/22/94	Software implementation of DES that is used in LOCKout products; LOCKout uses DES-based challenge-response to provide protection for networks, support remote user dial-in authentication, and provide Internet Firewall protection for host computers.
Texas Instruments, Inc. P.O. Box 1443, M/S 736 Houston, TX 77001 -Mike Polen (713) 274-3635	TMS 99541	2/28/82	Preprogrammed TMS7020 8-bit single chip microprocessor; 40-pin DIP plastic package I/O pins are TTL compatible; master and active key registers.
TimeStep Corporation 600 March Road P.O. Box 13600 Kanata, Ontario K2K 2E6 -Tony Rosati (613) 599-3600	TS95C40	12/16/94	32Mbps DES engine - operates in ECB, CBC, 1-bit and 8-bit CFB modes; 32KB of EEPROM, random bit generator, time-of-day logic; implemented in the PERMIT 1010, a 28-pin, fully encapsulated hybrid device that plugs into boot ROM socket of PC LAN Adapters; enabling technology for network layer encryption, access control, and file integrity applications.
Transcrypt International, Inc. 4800 NW First Street Lincoln, NE 68521 -Jim Gilley (402) 474-4800	Transcrypt DES Subroutine & Key Schedule v 1.00 (software)	11/14/94	Transcrypt DES Subroutine is used in Transcrypt's DME 9600 Dual Mode Encryptor, which connects between the handset and base of a landline telephone, and provides analog scrambling or digital encryption of the conversation. Backwards compatible with Transcrypt's analog cellular and landline voice privacy products.
UNIVAC P.O. Box 3942 St. Paul, MN 55165 -Jim Nelson (612) 631-6728	End-End/Mass Storage Encryptor	1/29/80	Prototype device for testing purposes only.

DES Validated Devices, *Continued*

MANUFACTURER ADDRESS	PRODUCT	VALIDATION DATE	DESCRIPTION
Virtual Open Network Environment Corp. 12300 Twinbrook Parkway Rockville, MD 20852 -George Thornton (301) 881-2297	V-ONE DES Module (software)	7/25/94	Smart card system for PC security, file encryption and decryption, user authentication, secure remote system logon, personal identification, and multilevel system access.
VLSI Technology, Inc. 8375 S. River Parkway Tempe, AZ 85284 -Ray Slusarczyk (602) 752-8574	VM007 - Data Encryption Processor	1/6/92	The VM007 Data Encryption Processor is a programmable integrated circuit that provides a complete cryptographic system on a single chip; contains a hardware implementation of the DES, RISC-based sequencer, data storage registers, and ROM-based microprogram. Designed to provide very high data and key processing rates (up to 190 Mbits/sec), flexible I/O interfacing, advanced security features, and supports all DES modes of operation; manufactured using 1.0 micron CMOS technology; available in a 84-pin leaded ceramic chip carrier.
	VM009 Data Encryption Processor	1/11/93	The VM009 Data Encryption Processor is a programmable integrated circuit that provides a complete cryptographic system on a single chip. Contains a hardware implementation of the DES, and data storage registers. Designed to provide very high data and key processing rates (up to 100 Mbits/sec), flexible I/O interfacing, advanced security features, and supports all DES modes of operation; manufactured using 1.0 micron CMOS technology; available in a 40 lead plastic DIP and 44 lead plastic leaded chip carrier.
Vobach Systems, Inc. 11114 Ashcroft Houston, TX 77096 -Dr. Miles Smither Circuit Concepts, Inc. (713) 331-2744	Shades DES, version 1.0 (software)	1/20/95	Used in Shades products to provide a source of pseudo-random numbers for two purposes. The pseudo-random numbers may be used to 1) encode a plaintext message or ciphertext, and 2) generate substitution or permutation tables for the numerical codings of plaintext characters.
Wells Fargo Security Products A Unit of Baker Protective Services 1010 North Glebe Road, Suite 680 Arlington, VA 22201 -William Martin (703) 247-4250	WP PN 5286/WP PN 5287	5/26/89	The monitor panels are intended for use in a monitoring station of a proprietary intrusion detection alarm system.
Western Digital Corporation 2445 McCabe Way Irvine, CA 92714 Product Marketing Manager for Security Devices (714) 474-2033 x7853	WD-2001/WD2002	8/9/79	Uses Si-gate nMOS, TTL compatible; ECB speeds of up to 40 Kbytes/second, 161 Kbytes/second and 242 Kbytes/second.
	WD20C03 DES Device	5/19/87	Uses Si-gate CMOS, TTL compatible; ECB and CBC, speeds of up to 403 Kbytes/second, 645 Kbytes/second and 807 Kbytes/second in ECB. and 807 Kbytes/second in ECB.

6.7 FIPS 113, Computer Data Authentication Message Authentication Code (MAC) Implementations

Vendor/Contact	Implementation	Validated Options	Vendor/Contact	Implementation	Validated Options
1. ACS Communications Systems Inc. 480 Spring Park Place Suite 900 Herndon, VA 22070 Don Cole, (703) 471-0892	Personal Computer Security Module, PCSM-T May 16, 1986	BINARY OPTION (FIPS 113)	9. Digitech Telecommunications, Inc. 342 Madison Avenue Suite 2010 New York, NY 10017 James J. McKeeff, (212) 657-7230	Softnet Software, Version 1 June 29, 1987	BINARY OPTION (FIPS 113)
2. Federal Reserve Bank of Cleveland P.O. 8. 6387 Cleveland, Ohio 44101 Dave Rich, (216) 579-2221	Jones Futurex PC Encryption Board FRS PC MAC Processor October 28, 1986	BINARY OPTION (FIPS 113) CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING CODED CHARACTERS; ENTIRE MESSAGE; EDITING	10. Sytek, Inc. Rights transferred to AeT Research, Inc. on January 29, 1988 - see entry 17 AeT Research 675 North First Street Suite 800 San Jose, CA 95112 Linden Feldman, (408) 275-0820	MACbox June 30, 1987	BINARY OPTION (FIPS 113) CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING CODED CHARACTERS; ENTIRE MESSAGE; EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; NO EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; EDITING
3. Shannon Systems, Inc. Mountain View, CA Out of Business	Remote Crypto Facility Software Version 3.0 January 16, 1987	BINARY OPTION (FIPS 113)	11. Inter-Quest, Inc. 16508 East Laser Drive Fountain Hills, AZ 85268 Charles Redding, (602) 948-2560	PORT-OF-ENTRY Computer Security System Vers 1.2 (Software) August 17, 1987	BINARY OPTION (FIPS 113) CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING CODED CHARACTERS; ENTIRE MESSAGE; EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; NO EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; EDITING
4. Codercard, Inc. Rights transferred to LITRONICS Information Systems on Sept. 12, 1990 - see entry 23. LITRONICS Information Systems 2950 Redhill Avenue Costa Mesa, CA 92626 Bob Gray, (714) 557-3444	Personal Computer Security Adaptor, CPS-300 Argus, Version 1 Software February 26, 1987	BINARY OPTION (FIPS 113) CODED CHARACTERS, ENTIRE MESSAGE, NO EDITING CODED CHARACTERS, ENTIRE MESSAGE, EDITING CODED CHARACTERS, EXTRACTED MESSAGE ELEMENTS, NO EDITING CODED CHARACTERS, EXTRACTED MESSAGE ELEMENTS, EDITING	12. Racal-Guardata Limited Richmond Court 309 Fleet Road Fleet, Hampshire GU13 8BU England Paul Halliden, (252) 622144, England	PC Security Module, RGL 600 RGL 600 Host PC C Driver Software, Version: V1.01 November 20, 1987	BINARY OPTION (FIPS 113)
5. Jones Futurex, Inc. 10933 Trade Center Drive Rancho Cordova, CA 95670 Don Thompson, (916) 635-3972	MAC-310 Message Authenticator February 27, 1987	BINARY OPTION (FIPS 113)	13. The Chase Manhattan Bank, N.A. 1 Seaport Plaza 11th Floor New York, New York 10038 Bob Martian, (212) 797-4038	C-FIMAS 16 Software, Version 1.0 December 8, 1987	BINARY OPTION (FIPS 113) CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING CODED CHARACTERS; ENTIRE MESSAGE; EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; NO EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; EDITING
6. Infomax Securities 6974 Sandpiper Place Carlsbad, CA 92008 David Howard, (619) 931-8787	Protecom Crypto Processor Protecom Device Driver & Utilities, Version 0.5 March 27, 1987	BINARY OPTION (FIPS 113)	14. Atalla Corporation 2304 Zanker Road San Jose, CA 95131 Dale Hopkins, (408) 435-8850	Personal Computer Module, CPCM CPCM.HEX Software, Version OA 13-2043-01 January 11, 1988	BINARY OPTION (FIPS 113)
7. Inter-Quest, Inc. 16508 E. Laser Drive Fountain Hills, AZ 85268 Charles Redding, (602) 948-2560	PORT-OF-ENTRY Computer Security System Vers. 1.1 (Software) May 8, 1987	BINARY OPTION (FIPS 113)			
8. Infomax Securities 6974 Sandpiper Place Carlsbad, CA 92008 David Howard, (619) 931-8787	Protecom Crypto Processor Protecom Device Driver & Utilities, Version 0.6 May 11, 1987	BINARY OPTION (FIPS 113) CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING CODED CHARACTERS; ENTIRE MESSAGE; EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; NO EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; EDITING			

Message Authentication Code (MAC) Implementations, *Continued*

Vendor/Contact	Implementation	Validated Options	Vendor/Contact	Implementation	Validated Options
16. GN Telematic, Inc. 46 Manning Road Billerica, MA 01821 Poul Hebsgaard, (617) 667-8644	safeMatic 2000, K876-17527 Coded Character Set Processing Software, Model K877-17012, Version A February 3, 1988	BINARY OPTION (FIPS 113) CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING CODED CHARACTERS; ENTIRE MESSAGE; EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; NO EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; EDITING	22. Racal-Guardata, Inc 480 Spring Park Place Suite 900 Herndon, VA 22070 Brian Sucholz, (703) 471-0892	X9 Crypto Server June 1, 1990	BINARY OPTION (FIPS 113) CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING CODED CHARACTERS; ENTIRE MESSAGE; EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; NO EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; EDITING
17. AeT Research 675 North First Street Suite 800 San Jose, CA 95112 Originally validated on June 30, 1987 as a Sytek, Inc. device - see entry 10. Linden Feldman, (408) 275-0820	MACbox August 8, 1988	BINARY OPTION (FIPS 113) CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING CODED CHARACTERS; ENTIRE MESSAGE; EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; NO EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; EDITING	23. LITRONIC Information Systems 2950 Redhill Avenue Costa Mesa, CA 92626 Rights transferred on September 12, 1990 Bob Gray, (714) 545-6649 James Prohaska, (703) 960-8068	Personal Computer Security Adapter Argus, Version 1 Software** Originally validated by Codercard, Inc. on February 26, 1987 - see entry 4.	BINARY OPTION (FIPS 113) CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING CODED CHARACTERS; ENTIRE MESSAGE; EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; NO EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; EDITING
18. Atalla Corporation 2304 Zanker Road San Jose, CA 95131 Dale Hopkins, (408) 435-8850	Personal Computer Module, MN-40-249 CPCM.HEX Software, Version OE 13-2043-00 September 26, 1988	BINARY OPTION (FIPS 113)	24. IBM Corporation Dept. 65K/B204-3 1001 W.T. Harris Blvd. Charlotte, NC 28257 Roger Evans, (704) 594-7060	4755 Cryptographic Adapter October 15, 1990	BINARY OPTION (FIPS 113)
19. Cypher Communications Technology, Inc. 4520 East-West Highway Suite 550 Bethesda, MD 20814 Angel Bailey, (301) 652-6790	CYCOM SCI AX3 5.01, Version 10084002 February 2, 1989	BINARY OPTION (FIPS 113)	25. IBM Corporation Dept. 65K/B204-3 1001 W.T. Harris Blvd. Charlotte, NC 28257 Roger Evans, (704) 594-7060	4754 Security Interface Unit October 15, 1990	BINARY OPTION (FIPS 113)
20. Dial-Guard 55 Koch Road/PO Box 7045 Corte Madera, CA 94925 Shun-Hwa Chang or Trone Miller, (415) 927-2232	Dial-Guard Remote Authenti- cator 01-103, Version 2.0 Rev. 0 March 6, 1989	BINARY OPTION (FIPS 113)	26. IBM Corporation Dept. 65K/B204-3 1001 W.T. Harris Blvd. Charlotte, NC 28257 Roger Evans, (704) 594-7060	IBM Personal Security Card October 15, 1990	BINARY OPTION (FIPS 113)
21. Oklok Data 3945 St. Martin Laval, Quebec, Canada H7T 1B7 Claude Vigeant, (514) 681-1681	RAC/M FAS-PACK, Version 1.0 April 24, 1989	BINARY OPTION (FIPS 113) CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING CODED CHARACTERS; ENTIRE MESSAGE; EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; NO EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; EDITING	27. Cypher Communica- tions Technology, Inc. 15200 Shady Grove Rd. Suite 350 Rockville, MD 20850 Angel Bailey, (301) 590-9314	CYCOM SCI/SL 96 AX5 5.03, Version 10084012 December 19, 1990	BINARY OPTION (FIPS 113)
			28. Cypher Communica- tions Technology, Inc. 15200 Shady Grove Rd. Suite 350 Rockville, MD 20850 Angel Bailey, (301) 590-9314	CYCOM SCI 192 AX7 5.05, Version 10084020 January 10, 1991	BINARY OPTION (FIPS 113)

Message Authentication Code (MAC) Implementations, *Continued*

Vendor/Contact	Implementation	Validated Options
29. Digital Equipment Corporation Digital Drive - MK01-2/B06 Merrimack, NH 03054 Steve Lawrence, (603) 884-3445	PIN Pad 201 SMD Model: P003-120-XX March 25, 1991	BINARY OPTION (FIPS 113)
30. Information Security Corporation 1141 Lake Cook Road Suite D Deerfield, IL 60015 Michael Markowitz, (708) 406-0500	DES Module used in SpyProof! July 10, 1991	BINARY OPTION (FIPS 113)
31. Digital Signature Validated by Information Security Corporation 1115 N. East Avenue Oak Park, IL 60302 Michael Markowitz, (708) 406-0500	DES Module used in CryptMaster (3.20) and SecretAgent (1.00) July 15, 1991	BINARY OPTION (FIPS 113)
32. The Exchange Systems 15395 SE 30th Place Bellevue, WA 98007-6594 Robert Adamson, (206) 644-7000 X255	PCE-3000 (IBM PS/2 Microchannel) January 8, 1992	BINARY OPTION (FIPS 113) CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING CODED CHARACTERS; ENTIRE MESSAGE; EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; NO EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; EDITING
33. The Exchange Systems 15395 SE 30th Place Bellevue, WA 98007-6594 Robert Adamson, (206) 644-7000 X255	PCE-1000 ISA Adaptor January 9, 1992	BINARY OPTION (FIPS 113) CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING CODED CHARACTERS; ENTIRE MESSAGE; EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; NO EDITING CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; EDITING

6.8 FIPS 171, Key Management Validation Using ANSI X9.17

Vendor/Contact	Implementation	Validated Options	Vendor/Contact	Implementation	Validated Options
<p>1. LITRONICS Information Systems 2850 Redhill Avenue Costa Mesa, CA 92626</p> <p>(Originally validated by Codercard; rights transferred on September 11, 1990)</p> <p>Bob Gray, (714) 645-6649 James Prohaska, (703) 960-8068</p>	<p>Hardware: <u>Argus-PC</u> Model: <u>CMS-100</u> Software: <u>Argus/MACE</u> Software, Version: <u>1.0</u></p> <p>September 23, 1988</p>	<p>No. of communicating pairs: <u>2</u> No. of manual (*)JKKs per comm. pair: <u>2</u> Length of manual and auto. (*)JKKs: <u>PAIR</u> Key generation capability: <u>YES</u> Number of auto. distr. (*)JKKs shared: <u>UP TO 4</u> Number of KDs shared: <u>UP TO 8</u> 2 KDs in KSMs: <u>SOMETIMES</u> Send RSI messages: <u>NOT TESTED</u> Receive RSI messages: <u>NOT TESTED</u> Notarization of keys in KSMs: <u>ALWAYS</u> Send odd parity on keys in KSMs: <u>ALWAYS</u> Send IVs in KSMs: <u>SOMETIMES</u> Send encrypted IVs in KSMs: <u>ALWAYS</u> Send EDCs in RSIs and ESMs: <u>ALWAYS</u> Action if EDC received in RSIs and ESMs: <u>NOT APPLICABLE</u> Send EDKs in KSMs: <u>SOMETIMES</u> Action on count error: <u>ADJUST COUNT</u> Send DSMs: <u>YES</u> Receive DSMs: <u>YES</u> IDA in DSM if only one KD can be shared: <u>YES</u> Role assumed: <u>EITHER A OR B</u> Automatic error recovery: <u>NOT TESTED</u> Space & CRLF as field delimiter: <u>NOT TESTED</u></p>	<p>3. TECHNICAL COMMUNICATIONS CORPORATION 100 Domino Drive CONCORD, Massachusetts 01742</p> <p>John Gill, (617) 862-6036</p>	<p>Hardware: <u>CX5000</u> Software: <u>Version: 2.0</u></p> <p>May 15, 1991</p>	<p>No. of communicating pairs: <u>1</u> No. of manual (*)JKKs per comm. pair: <u>2</u> Length of manual and auto. (*)JKKs: <u>PAIR</u> Key generation capability: <u>YES</u> Number of auto. distr. (*)JKKs shared: <u>4</u> Number of KDs shared: <u>1</u> 2 KDs in KSMs: <u>NEVER</u> Send RSI messages: <u>NOT TESTED</u> Receive RSI messages: <u>NOT TESTED</u> Notarization of keys in KSMs: <u>ALWAYS</u> Send odd parity on keys in KSMs: <u>ALWAYS</u> Send IVs in KSMs: <u>SOMETIMES</u> Send encrypted IVs in KSMs: <u>ALWAYS</u> Send EDCs in RSIs and ESMs: <u>ALWAYS</u> Action if EDC received in RSIs and ESMs: <u>NOT APPLICABLE</u> Send EDKs in KSMs: <u>NEVER</u> Action on count error: <u>ADJUST COUNT</u> Send DSMs: <u>YES</u> Receive DSMs: <u>YES</u> IDA in DSM if only one KD can be shared: <u>YES</u> Role assumed: <u>EITHER A OR B</u> Automatic error recovery: <u>NOT TESTED</u> Space & CRLF as field delimiter: <u>NOT TESTED</u></p>
<p>2. TECHNICAL COMMUNICATIONS CORPORATION 100 Domino Drive CONCORD, Massachusetts 01742</p> <p>John Gill, (617) 862-6036</p>	<p>Hardware: <u>CX5000A</u> Software: <u>Version: 1.0</u></p> <p>May 6, 1991</p>	<p>No. of communicating pairs: <u>1</u> No. of manual (*)JKKs per comm. pair: <u>2</u> Length of manual and auto. (*)JKKs: <u>PAIR</u> Key generation capability: <u>YES</u> Number of auto. distr. (*)JKKs shared: <u>0</u> Number of KDs shared: <u>1</u> 2 KDs in KSMs: <u>NEVER</u> Send RSI messages: <u>NOT TESTED</u> Receive RSI messages: <u>NOT TESTED</u> Notarization of keys in KSMs: <u>ALWAYS</u> Send odd parity on keys in KSMs: <u>ALWAYS</u> Send IVs in KSMs: <u>SOMETIMES</u> Send encrypted IVs in KSMs: <u>ALWAYS</u> Send EDCs in RSIs and ESMs: <u>ALWAYS</u> Action if EDC received in RSIs and ESMs: <u>NOT APPLICABLE</u> Send EDKs in KSMs: <u>NEVER</u> Action on count error: <u>ADJUST COUNT</u> Send DSMs: <u>YES</u> Receive DSMs: <u>YES</u> IDA in DSM if only one KD can be shared: <u>YES</u> Role assumed: <u>EITHER A OR B</u> Automatic error recovery: <u>NOT TESTED</u> Space & CRLF as field delimiter: <u>NOT TESTED</u></p>	<p>4. COMMUNICATION DEVICES, INC. 1 Forstmann Court Clifton, NJ 07011</p> <p>Gene Hartsell, (201) 772-6997</p>	<p>Hardware: <u>RSD/E</u> Software: <u>Version 7.2</u></p>	<p>No. of communicating pairs: <u>1</u> No. of manual (*)JKKs per comm. pair: <u>1</u> Length of manual and auto. (*)JKKs: <u>PAIR</u> Key generation capability: <u>NO</u> Number of auto. distr. (*)JKKs shared: <u>0</u> Number of KDs shared: <u>1</u> 2 KDs in KSMs: <u>NEVER</u> Send RSI messages: <u>NOT TESTED</u> Receive RSI messages: <u>NOT TESTED</u> Notarization of keys in KSMs: <u>ALWAYS</u> Send odd parity on keys in KSMs: <u>ALWAYS</u> Send IVs in KSMs: <u>SOMETIMES</u> Send encrypted IVs in KSMs: <u>ALWAYS</u> Send EDCs in RSIs and ESMs: <u>ALWAYS</u> Action if EDC received in RSIs and ESMs: <u>NOT APPLICABLE</u> Send EDKs in KSMs: <u>NEVER</u> Action on count error: <u>ADJUST COUNT</u> Send DSMs: <u>YES</u> Receive DSMs: <u>YES</u> IDA in DSM if only one KD can be shared: <u>YES</u> Role assumed: <u>EITHER A OR B</u> Automatic error recovery: <u>NOT TESTED</u> Space & CRLF as field delimiter: <u>NOT TESTED</u> Number of communicating pairs: <u>1</u> Number of manual (*)JKKs per comm. pair: <u>2</u> Length of manual and</p>



7. PRODUCT DATA CONFORMANCE TESTING

7.1 IGES

FIPS 177, Initial Graphics Exchange Specifications (IGES) defines a neutral file format for the exchange of product model data and representation among differing computer-aided design and computer-aided manufacturing (CAD/CAM) systems. FIPS 177 adopts the ASME/ANSI Y14.26M, IGES version 4.0.

A revision to FIPS 177-1 (announced in Federal Register, April 12, 1995) will adopt the ANSI/US PRO 100 IGES, version 5.2. In accordance with FIPS 177-1, CAD/CAM systems acquired for Federal use shall include an IGES preprocessor and postprocessor capability. FIPS 177-1 requires that IGES implementations offered to Federal agencies be tested using the NIST IGES validation test suite. Conformance testing of IGES implementations protects Federal investments by ensuring adherence to the IGES specification and maximizing the probability of successful exchange among systems which implement IGES. The NIST IGES test procedures and test suites are available from:

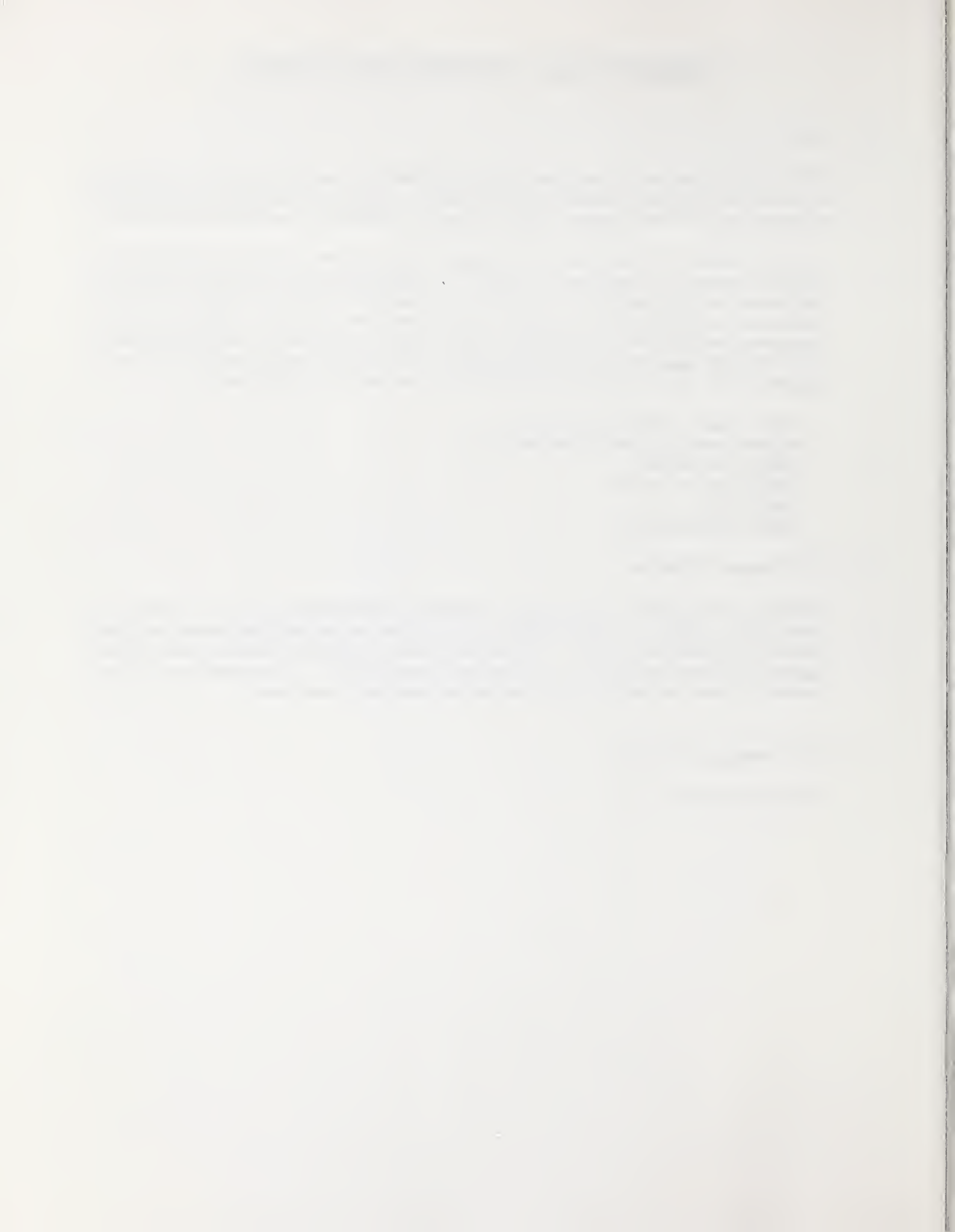
Project Leader, IGES Validation Tests
National Institute of Standards and Technology
Bldg 225, Room A266
Gaithersburg, MD 20899
301-975-3265
e-mail: igesinfo@nist.gov

7.1.1 Certificate of Validation

The NIST IGES Validation Test service tests preprocessors and/or postprocessors for conformance to either IGES 4.0, IGES 5.2, or MIL-D-28000, Class II. Preprocessors and postprocessors are tested separately, using different test suites. A certificate of validation is issued for those processors that have been tested and are considered to be in compliance with FIPS 177. A registered report without certificate is issued for those processors that have been tested but contain errors.

7.1.2 IGES Validated Products

No entries at this time



8. OSI PRODUCTS DATABASE

The Open System Interconnection (OSI) products database was started to assist Federal Agencies in assuring conformance to Federal Information Processing Standard 146-1, Government Open Systems Interconnection Profile (GOSIP). FIPS 146-1 has been replaced by FIPS 146-2, Profiles for Open Systems Internetworking Technologies, (POSIT). However, a register of OSI products is maintained for the convenience of those agencies that wish to acquire products based on OSI standards. Testing for conformance to the OSI standards and for interoperability with other OSI implementations is available.

NISTIR 4594, "GOSIP Conformance and Interoperation Testing and Registration" establishes the framework for the establishment of registers for Test Suites, Test Systems (Means of Testing), Conformance Testing Laboratories, and Interoperability Testing Services.

The OSI database is an online database facility that provides information for the following list of registers:

1. OSI Abstract Test Suites (ATS).
2. Assessed Means of Testing (MOT).
3. NVLAP Accredited Test Laboratories.
4. Conformance Tested OSI Products.
5. Interoperability Test Suites (ITS) for OSI Products.
6. Reference Entities for Means of Testing Assessment(s).
7. Interworking OSI Products.
8. Interoperability Test and Registration Services.

These files are available for downloading and may be accessed via anonymous ftp over the internet from:

Host Name: huachuca-jitcosi
IP Address: 138.27.7.2

Files are available in both ASCII (.ask) and WordPerfect 5.1 (.w51) formats. Login with "anonymous" and use your internet address for the password. For .w51 files, binary transfer is required.

For any questions, problems or comments dealing with this database please contact:

Ken Thomas
Joint Interoperability Test Center - TCBB
Fort Huachuca, AZ 85613-7020
(602) 538-5170
e-mail: C3A-TCB@huachuca-EMH2.army.mil

MEMORANDUM

TO : [Illegible]

FROM : [Illegible]

SUBJECT : [Illegible]

[Illegible text block]

[Illegible text block]

[Illegible text block]

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APPENDIX A

FIPS CONFORMANCE TESTING PRODUCTS AND SERVICES



APPENDIX A

FIPS CONFORMANCE TESTING PRODUCTS AND SERVICES

The purpose of this appendix is to provide information about products and services that are available to Federal Agencies for assessing products for conformance to FIPS.

The entries in this list identify the topic, the standard tested, the NIST contact, and the product or service offered. The letters T, S, or C in the Product/Service column indicate a test method, testing service, or certificate/registered report respectively.

<u>TOPIC</u>	<u>STANDARD</u>	<u>CONTACT</u>	<u>PRODUCT/SERVICE</u>
COBOL	FIPS PUB 21-3	Judy Kailey NIST, Bldg. 225, Rm. A266 Gaithersburg, MD 20899 (301) 975-3259	T, S, C
Fortran	FIPS PUB 69-1	Judy Kailey NIST, Bldg. 225, Rm. A266 Gaithersburg, MD 20899 (301) 975-3259	T, S, C
Pascal	FIPS PUB 109	Carmelo Montanez NIST, Bldg. 225, Rm. A266 Gaithersburg, MD 20899 (301) 975-2398	T, S, C
C	FIPS PUB 160	Carmelo Montanez NIST, Bldg. 225, Rm. A266 Gaithersburg, MD 20899 (301) 975-2398	T, S, C
Ada	FIPS PUB 119	William Dashiell NIST, Bldg. 225, Rm. A266 Gaithersburg, MD 20899 (301) 975-2490	T, S, C
M[UMPS]	FIPS PUB 125	William Dashiell NIST, Bldg. 225, Rm. A266 Gaithersburg, MD 20899 (301) 975-2490	T, S, C
VHDL	FIPS PUB 172	William Dashiell NIST, Bldg. 225, Rm. A266 Gaithersburg, MD 20899 (301) 975-2490	(Planned)

<u>TOPIC</u>	<u>STANDARD</u>	<u>CONTACT</u>	<u>PRODUCT/SERVICE</u>
SQL	FIPS PUB 127-2	Joan Sullivan NIST, Bldg. 225, Rm. A266 Gaithersburg, MD 20899 (301) 975-3258	T, S, C
GKS	FIPS PUB 120	Susan (Quinn) Sherrick NIST, Bldg. 225, Rm. A266 Gaithersburg, MD 20899 (301) 975-3268	T, S, C
CGM	FIPS PUB 128 MIL-D-28003	Lynne Rosenthal NIST, Bldg. 225, Rm. A266 Gaithersburg, MD 20899 (301) 975-3353	T, S, C
PHIGS	FIPS PUB 153 ANSI/ISO 9592.1-1989	Kevin Brady NIST, Bldg. 225, Rm. A266 Gaithersburg, MD 20899 (301) 975-3644	T, S, C
Raster	FIPS PUB 150 MIL-R-28002	Frank Spielman NIST, Bldg. 225, Rm. A266 Gaithersburg, MD 20899 (301) 975-3257	T, S, C
IRDS	FIPS PUB 156	Alan Goldfine NIST, Bldg. 225, Rm. A266 Gaithersburg, MD 20899 (301) 975-3252	T, S, C
IGES	FIPS PUB 177-1	Lynne Rosenthal NIST, Bldg. 225, Rm. A266 Gaithersburg, MD 20899 (301) 975-3353	T, S, C
POSIX	FIPS PUB 151-2	Martha Gray NIST, Bldg. 225, Rm. B266 Gaithersburg, MD 20899 (301) 975-3276	T, S, C
Message Authentication	FIPS PUB 113	Miles Smid NIST, Bldg. 225, Rm. A216 Gaithersburg, MD 20899 (301) 975-2938	T, S, C
Key Management Validation	FIPS PUB 171 ANSI X9.17	Miles Smid NIST, Bldg. 225, Rm. A216 Gaithersburg, MD 20899 (301) 975-2938	T, S, C

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Data Encryption Standard	FIPS PUB 46-1	Miles Smid NIST, Bldg. 225, Rm. A216 Gaithersburg, MD 20899 (301) 975-2938	T, S, C
OSI	FIPS PUB 146	J. P. Favreau NIST, Bldg. 225, Rm B217 Gaithersburg, MD 20899 (301) 975-3634	T, S
1984 X25	CCITT X.25-1984 ISO 7776, ISO 8208 ISO 8882, ISO 9646 FIPS PUB 100-1	David Su NIST, Bldg. 223, Rm. B364 Gaithersburg, MD 20899 (301) 975-6194	T
ISDN	FIPS PUB 182	David Su NIST, Bldg. 223, Rm. B364 Gaithersburg, MD 20899 (301) 975-6194	T
ISDN Physical Layer	ANSI T1.605 (S/T Interface) ANSI T1.601 (U Interface)	David Su NIST, Bldg. 223, Rm. B364 Gaithersburg, MD 20899 (301) 975-6194	T
ISDN Data Link Layer	CCITT Q.921 ANSI T1.602	David Su NIST, Bldg. 223, Rm. B364 Gaithersburg, MD 20899 (301) 975-6194	T
ISDN Network Layer	ANSI T1.607 ANSI T1.608 FIPS PUB	David Su NIST, Bldg. 223, Rm. B364 Gaithersburg, MD 20899 (301) 975-6194	T
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