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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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.
ACKNOWLEDGEMENTS

The co-editors would like to acknowledge the valuable efforts and contributions of the following people and organizations within NIST.

Judy Kailey, (ISE) for developing the document layout, and editing previous issues of the VPL.

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Susan Sherrick, (ISE), for GKS entries.

Lynne Rosenthal, (ISE), for CGM and IGES entries.

Kevin Brady, (ISE), for PHIGS information.

Martha Gray, of the Systems and Software Technology Division, CSL, for the POSIX entries.

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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APPENDIX A FIPS CONFORMANCE TESTING PRODUCTS AND SERVICES  A-1
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
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)

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<td>Ada [Disk (MS/DOS)]</td>
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<td>M[UMPS]</td>
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<td>PB94-504099</td>
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</table>

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.

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<td>National Institute of Standards and Technology</td>
<td>L. Arnold Johnson</td>
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<td></td>
<td>Software Standards Validation Group</td>
<td>Judy Kailey</td>
<td>COBOL, Fortran</td>
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<td></td>
<td>Building 225, Room A266</td>
<td>Carmelo Montanez</td>
<td>BASIC</td>
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<tr>
<td></td>
<td>Gaithersburg, MD 20899</td>
<td>William Dashiell</td>
<td>Pascal, C</td>
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<td>(301) 975-3274</td>
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<td>Ada, M[UMPS], SQL,</td>
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<td>Telex: 197674 NBS UT</td>
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<td>VHDL, COBOL, Fortran</td>
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<td>FAX: (301) 948-6213</td>
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<td>National Computing Centre Limited (NCC)</td>
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</table>
British Standards Institution
Quality Assurance (BSIQA)
P.O. Box 375
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MK14 6LL
United Kingdom
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Telex: 827682 BSIQAS G

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ASD/SCEL
Wright-Patterson AFB, OH 45433-6503
(513) 255-4472

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Ada Information Clearinghouse
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Falls Church, VA 22041
(703) 681-2466

National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161
(703) 487-4650
## 2.7 Language Processors with Certificates

### No Nonconformities

#### 2.7.1 COBOL Processors

<table>
<thead>
<tr>
<th>Supplier</th>
<th>Processor ID; VSR#; Subset; Expiry Date</th>
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<td>CA-Visual Realia Version 1.0 NIST-95/1803; Intermediate; 7/1/96</td>
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<td>VAX 4000 models 200, 300; VAX 6000 models 200, 300, 400, 500; VAX's 8200, 8230, 8300, 8350, 85xx, 8600, 8650, 8700, 8800, 8810, 8820, 8830, 8840; VAX 9000 models 210, 400; VAXt 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</td>
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<td>Hitachi Data Systems GX/6215; Hi-OSF/1-M Version R1.2</td>
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<td>Sequent Symmetry Pentium™ 60 DYNIX/ptx Version 4.0</td>
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<td>Siemens Nixdorf Informations-systems AG</td>
<td>COBOL®5 Version 2.1B NIST/NCC-94/987; High 8/23/96</td>
<td>7.500; BS2000/OSD Version 1.0</td>
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<td>Silicon Graphics, Inc.</td>
<td>Micro Focus COBOL V3.2 for UNIX (SGI Indigo and Challenge); NIST-95/1925; High; 8/1/96</td>
<td>SGI Iris Indigo; IRIX Version 5.2</td>
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<td>UNISYS</td>
<td>UCS COBOL (UCOB) Version 6R3 Release SB5R3; NIST-95/1041; High; 1/1/96</td>
<td>Unisys 2200 Model 900; 2200 OS EXEC Version 44R3 Release SB5R3</td>
<td>Unisys 2200 Model 500; 2200 OS EXEC Version 44R3 Release SB5R3</td>
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## 2.7.2 FORTRAN PROCESSORS

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<td>Convex C46X0, C38X0, C34X0, C32X0; ConvexOS Versions 10.2, 11.0</td>
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<td>Convex SPP1000/XA, SPP1000/CD SPP-UX, Versions 3.02, 3.04</td>
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<td>Cray C90; UNICOS Release 8.0</td>
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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.
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<td>UNISYS</td>
<td>UCS Fortran (UFTN) Version 5R3 Release SB5R3; NIST-95/1042; 1/1/96</td>
<td>Unisys 2200 Model 900; 2200 OS EXEC Version 44R3 Release SB5R3</td>
<td>Unisys 2200 Model 500; 2200 OS EXEC Version 44R3 Release SB5R3</td>
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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 speakle.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# YYMDDDFX.XXNNN

-YYMDD 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

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<td>DEC Pascal Version 5.4 for OpenVMS Alpha Systems; NIST-94/2026; Level 0/1; 10/1/96</td>
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<td>Digital AlphaServer Products Models 1000, 2000, 2100; Digital AlphaStation Products Models 200, 400; DEC 3000 Models 300, 300L, 300X, 400, 400S, 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</td>
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<td>VAXt Models 110, 310, 410, 610, 612; 4000 Models 50, 100, 100A, 200, 300, 400, 500, 500A, 600, 600A, 700, 700A; VAX 6000 Models 220, 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, 310, 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, 48, 90, 3300, 3400, 3500, 3600, 3800, 3900; VAXstation II, 2000, 3100 Models 30, 38, 48, 75, 3200, 3500, 3520, 3540; VAXstation 4000 Models 60, 90, VCL; 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</td>
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<td>DEC Pascal Version 5.4 for Digital UNIX Systems; NIST-95/2028; Level 0/1; 10/1/96</td>
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<td>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</td>
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<td>Metrowerks Pascal &quot;Bronze&quot; Version 1.0 Release b; NIST-94/1682; Level 0; 10/1/95</td>
<td>Apple Quadra 630; Macintosh OS Version 7 Release 1.2P</td>
<td>Apple Power Book 520, 540; Macintosh OS Version 7.1.1 Apple Quadra 650; Macintosh OS Version 7.1.2</td>
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<td>Intel Express Server Model XLX8TEFTS for Intel 80486DX266; Microsoft Windows NT Server Version 3.5</td>
<td>Intel Classic R+ Workstation; Microsoft Windows NT Workstation Version 3.5</td>
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### 2.7.5 C PROCESSORS

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<td>Apple Quadra Model 630; Macintosh Operating System Version 7.1.2P</td>
<td>Apple PowerBook 520, 540; Macintosh OS Version 7.1.1 Apple Quadra 650; Macintosh OS Version 7.1.2</td>
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<td>AT&amp;T Global Information Systems</td>
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<td>AT&amp;T System 3000 Model 3445; NCR UNIX SVR4 MP-RAS Release 2</td>
<td>AT&amp;T System 3000 Models 3340, 3345, 3350, 3355, 3406, 3410, 3416, 3416-XL, 3430, 3447, 3450, 3455, 3455-X, 3470, 3475, 3475-XP, 3520, 3525, 3525-XP, 3550, 3555, 3555-XP, 3570, 3575, 3575-XP, 3600; NCR UNIX SVR4 MP-RAS Rel. 2</td>
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<td>VAX 4000 Model 900 OpenVMS VAX Version 7.0</td>
<td>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; VAXR 3000 Models 310, VAX11/730, /735, /780, /785, MicroVAX II, 2000, 3100, 3220, 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 1000 Model 600 OpenVMS VAX, Version 7.0</td>
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<td>DECstation 3000 Model 400; OpenVMS Alpha Version 6.2</td>
<td>DEC 2000 Model 300, 500; Digital 2100 A500MP/A500MP; 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</td>
<td>DEC 2000 Model 300, 500; Digital 2100 A500MP/A500MP; 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</td>
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<td>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</td>
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<td>HP9000 Model 755; HP-UX Version B.10.00</td>
<td>HP9000 Models 8x, 7x, 6x, FxO, GxO, HxO, IxO; HP-UX Version 9.0</td>
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<td>HP C/IX Version A.05:10 Release A.05.10A; NIST-95/1102; 1/1/96</td>
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<td>HP3000 Model 9xx; MPE/iX Version X50.20 Release 5.0</td>
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<td>IBM models 8535, 8540, 855x, 8565, 857x, 8580, 859x, 9533, 9545, 955x, 9576, 9577, 9585, 959x, 638x, 648x, 649x, 657x, 658x, 668x, 864x, 550, 720, 510, 510Cs, 340, 355, 360, 701, 750, 755, 700 OS/2 2.11 - Warp Version 3.0</td>
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<td>IBM RISC System/6000 (All Models) IBM AIX Version 4 Release 1</td>
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<td>Clipper Model C400-2430; CLIX Version 7.5</td>
<td>Clipper C300 and C400; CLIX Version 7.5</td>
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<td>MIPS/NEX Model Image RISCStation; Microsoft Windows NT Version 3.5</td>
<td>Unisys X-Series Deskside/LX; Compaq Deskpro XE560; IBM Valuepoint 6384-199; Microsoft Windows NT Version 3.5</td>
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<td>Microsoft C/C++ Optimizing Compiler Version 9.00 Release Microsoft Visual C++ Version 2.0; NIST-94/2141; 10/1/95</td>
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<td>Microsoft</td>
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<td>Unisys X-Series Deskside/LX; Compaq Deskpro XE560; IBM Valuepoint 6384-199; Microsoft Windows NT Version 3.5</td>
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<td>Pyramid Technology Corp.</td>
<td>DC/OSx ANSI C, Version 4.0 Release c08x; NIST-95/1621; 5/1/96</td>
<td>MiServer-ES; DC/OSx Version 1.1 Release c07x</td>
<td>Nile; DC/OSx Version 1.1 Release d08x</td>
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<td>SCO Canada, Inc.</td>
<td>SCO OpenServer Development System Release 5; NIST-95/1941; 7/1/96</td>
<td>DELL 486 Model 433/ME; SCO OpenServer Release 5</td>
<td>S2000/290, 490, 790 SE50, SE90, ELS, SE30, SE70, SE100; DYNIX/ptx Version 4.0</td>
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<td>Sequent Computer Systems, Inc.</td>
<td>ptx/C Version 4.0 NIST-95/1242; 2/1/96</td>
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<td>Tandem Computers Incorporated</td>
<td>C Release D30; NIST-94/2182; 12/1/95</td>
<td>Himalaya Range Model K10000 Open System Services on NonStop Kernel Release D30</td>
<td>Himalaya Range K100, K1000; Open System Services on NonStop Kernel Release D30</td>
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<td>Unisys</td>
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<td>2200 Model 900; 2200 OS EXEC Version 44R3 Release SB5R3</td>
<td>2200 Model 500 2200 OS EXEC Version 44R3 Release SB5R3</td>
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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

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<th>INTERFACES &amp; COMPILERS</th>
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<td>Teradata DBS, Version 5.F.0 (Pre-release); NIST-94/7150; 12/31/95;</td>
<td>Embedded C, C Preprocessor 2, V. 5.2 (Pre-release), SAS C, Version 500.G, Embedded COBOL</td>
<td>COBOL Preprocessor 2, V. 5.2 (Pre-release), Interactive SQL (FIPS Default)</td>
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<td>Client: Amdahl 5890-600E; IBM MVS XA, V. 2.2.0; Server: DBC/1012 Model 4 DBMS runs native to hardware</td>
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<td>ORACLE7, Release 7.1; NIST-94/7143; SUN SPARCstation 10; SunOS Version 4.1.3</td>
<td>Module C SQL*Module for C Version 1.0 SPARCompiler C Rel. 3.0</td>
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<tr>
<td>VENDOR</td>
<td>PROCESSOR ID; VSR#; SUBSET; &amp; EXPIRY DATE; HARDWARE; OPERATING SYS.</td>
<td>INTERFACES &amp; COMPILERS</td>
<td>OTHER HW/SW ENVIRONMENTS</td>
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<tr>
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<tr>
<td>Oracle Rdb for OpenVMS</td>
<td></td>
<td>Embedded Ada</td>
<td>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, 8550, 8590, 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-11/785; MicroVAX's II, 2000, 3100 Models 10/10E, 20/20E, 30, 40, 60, 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, 500, 600, 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</td>
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<td>VAX Version 6.0; NIST-94/7111; 03/31/96; VAXstation 3500; OpenVMS VAX, V. 5.4-3</td>
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<td>VAX Module Ada</td>
<td>VAX Ada V2.0 - 2.3</td>
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<td>VAX Ada Version 2.3</td>
<td>VAX C V3.0 - 3.2</td>
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<td>Oracle Rdb for OpenVMS</td>
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<td>Embedded C</td>
<td>VAX COBOL Version 5.1</td>
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<td>AXP Version 6.0; NIST-94/7112; 03/31/96; DEC 2000 Model 300; OpenVMS AXP, V. 1.5</td>
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<td>Module FORTRAN</td>
<td>VAX COBOL V4.2-4.4</td>
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<td>Embedded PASCAL</td>
<td>VAX Fortran V5.0 - 5.9</td>
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<td>VAX Pascal Version 4.4</td>
<td>VAX Pascal V4.0 - 4.4</td>
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<td>Interactive SQL</td>
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<th>INTERFACES &amp; COMPILERS</th>
<th>OTHER HW/SW ENVIRONMENTS</th>
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<td></td>
<td>ADABAS D, Version 6.1.1; NIST-95/7023; 7/31/96; IBM RS6000 320H AIX Version 3.2 upgrade 3250</td>
<td>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</td>
<td>Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults</td>
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<td>Schema Processor LOAD, utility bundled with ADABAS D Embedded COBOL COBOL Pre-compiler bundled with ADABAS D Microfocus COBOL, Version 3.235</td>
<td>Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults</td>
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<td>ADABAS D, Version 6.1.1; NIST-95/7025; 7/31/96; INTEL 486 Processor DX 2/66 Windows NT Version 3.5</td>
<td>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</td>
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<td>OTHER HW/SW ENVIRONMENTS</td>
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<td>ADABAS D, Version 6.1.1; NIST-95/7027; 7/31/96; INTEL 486 Processor DX 2/66 OS/2, Warp</td>
<td>Schema Processor LOAD, utility bundled with ADABAS D Embedded C C Pre-compiler bundled with ADABAS D IBM C/C++ Tools, Version 2.01</td>
<td>Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults</td>
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<td>Schema Processor LOAD, utility bundled with ADABAS D Embedded C C Pre-compiler bundled with ADABAS D SCO UNIX Release 3.2, Version 4.0</td>
<td>Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults</td>
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<td>ADABAS D, Version 6.1.1; NIST-95/702A; 7/31/96; INTEL 486 Processor SCO UNIX Rel 3.2 Ver 4.0</td>
<td>Schema Processor LOAD, utility bundled with ADABAS D Embedded COBOL COBOL Pre-compiler bundled with ADABAS D Microfocus COBOL, Version 3.141</td>
<td>Features Tested: Entry FIPS 127-2 FIPS Sizing Defaults</td>
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<td>VENDOR</td>
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<td>INTERFACES &amp; COMPILERS</td>
<td>OTHER HW/SW ENVIRONMENTS</td>
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<td>ADABAS D, Version 6.1.1; NIST-95/702B; 7/31/96;</td>
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<tr>
<td>SPARC STATION 2 Solaris Release 2.3</td>
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<td>Features Tested:</td>
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<td>ADABAS D, Version 6.1.1; NIST-95/702C; 7/31/96;</td>
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<td>SPARC STATION 2 Solaris Release 2.3</td>
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<tr>
<td>DEC 3000 AXP Model 500 DEC OSF/1 Version 2.0</td>
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<td>ADABAS D, Version 6.1.1; NIST-95/702E; 7/31/96;</td>
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<tr>
<td>DEC 3000 AXP Model 500 DEC OSF/1 Version 2.0</td>
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<td>Features Tested:</td>
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<tr>
<td>Sybase, Inc.</td>
<td>Sybase System 10 GA Release 10.0.1; NIST-94/7131; 4/30/96;</td>
<td>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</td>
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### SQL PROCESSORS, Continued

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<th>VENDOR</th>
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<th>INTERFACES &amp; COMPILERS</th>
<th>OTHER HW/SW ENVIRONMENTS</th>
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<td>Features Tested:</td>
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<td>Entry FIPS 127-2</td>
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**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

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

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<tr>
<th>VENDOR</th>
<th>NAME; EXPIRY DATE; VSR #; LEVEL</th>
<th>HARDWARE; SOFTWARE</th>
<th>NONCONFORMITY REGISTERED ENVIRONMENTS</th>
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<tr>
<td>Henderson Software, Inc.</td>
<td>HSIview, Version 1.15 9/97; NIST-I-95/001 Level 0, Level 2</td>
<td>PC/Pentium Dos 6.22, Windows 3.11 Viewsonic w/ Trident Board LaserJet II</td>
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None
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<th>CLIENT</th>
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<th>CGM/SIZE/DATE; GENERATOR</th>
<th>PLATFORM (As reported by Vendor)</th>
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<td>Interleaf, Inc</td>
<td>NIST-M-92/003-001 9/2/92; 1/1</td>
<td>asg.cgm 8880 8/31/92; Interleaf Inc MDL/G</td>
<td>Interleaf 5 v5.3, HP9000/700, HP UX v8.07</td>
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<td>IBM Corporation</td>
<td>NIST-M-92/005-002 10/28/92; 5/5</td>
<td>gcgm_i220.cgm 5280 10/27/92; GRAFPAK-CGM 1.1.2</td>
<td>IBM RS6000 Model 220, AIX 3.2</td>
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<td>Federal Sector Division</td>
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<td>gcgm_i530.cgm 5280 10/27/92; GRAFPAK-CGM 1.1.2</td>
<td>IBM RS6000 Model 530, AIX 3.2</td>
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<td>gcgm_n345.cgm 5280 10/27/92; GRAFPAK-CGM 1.1.2</td>
<td>NCR 3450, NCR UNIX SVR4</td>
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<td>ESRI</td>
<td>NIST-M-93/006-003 1/26/93; 5/5</td>
<td>sun.cgm 181680 1/19/93; ARC/INFO</td>
<td>SUN SparcStation, Sun OS 4.1.3</td>
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<td>sgi.cgm 181680 1/19/93; ARC/INFO</td>
<td>Silicon Graphics Indigo, IRIX 4.0.2</td>
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<td>EDS</td>
<td>NIST-M-93/007-004 1/29/93; 3/3</td>
<td>demo5.cgm 13280 1/28/93; GRAFPAK-GKS 4.0</td>
<td>SPARCStation 10 Model 30, Solaris 2.1</td>
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<td>Herndon, VA</td>
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<td>demo7.cgm 5360 1/28/93; GRAFPAK-GKS 4.0</td>
<td>SPARCStation 10 Model 30, Solaris 2.1</td>
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<td>demo8.cgm 3840 1/28/93; GRAFPAK-GKS 4.0</td>
<td>SPARCStation 10 Model 30, Solaris 2.1</td>
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</table>
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 and 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)

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

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

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

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

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

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

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).

<table>
<thead>
<tr>
<th>PRODUCT SUPPLIERS</th>
<th>REFERENCE FILE #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amdahl Corporation</td>
<td>AMD5598</td>
</tr>
<tr>
<td>Apple Computer Inc.</td>
<td>APP2482, APP3355, APP7204, APP7224, APP7235, APP8616, APP9125, APP9165</td>
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<tr>
<td>AT&amp;T</td>
<td>ATT1566</td>
</tr>
<tr>
<td>BULL S.A.</td>
<td>BUL2387, BUL6051</td>
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<tr>
<td>Control Data Corporation</td>
<td>CDC1101, CDC5574, CDC5750</td>
</tr>
<tr>
<td>CONVEX Computer Corporation</td>
<td>CON0202, CON2551, CON6027</td>
</tr>
<tr>
<td>Cray Research, Inc.</td>
<td>CRA2641</td>
</tr>
<tr>
<td>Data General Corporation</td>
<td>DGC2542, DGC4767, DGC8016, DGC8703, DGC9391, DGC9574</td>
</tr>
<tr>
<td>Digital Equipment Corp.</td>
<td>DEC0319, DEC0638, DEC4670, DEC5794, DEC7386, DEC7833, DEC7917, DEC8003, DEC9418, DEC9872</td>
</tr>
<tr>
<td>Encore Computer Corporation</td>
<td>ENC6897</td>
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<tr>
<td>ESIX/Encorex Systems, Inc.</td>
<td>EVR9690, EVR9749</td>
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<tr>
<td>Harris Corporation</td>
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<td>Hewlett-Packard Company</td>
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<tr>
<td>Interactive Systems Corp.</td>
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<tr>
<td>Intergraph Corporation</td>
<td>INT4675</td>
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<tr>
<td>International Business Machines, Inc.</td>
<td>IBM0320, IBM0458, IBM1344, IBM2592, IBM3697</td>
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<td>Lynx Real-Time Systems, Inc.</td>
<td>LNX3076</td>
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<tr>
<td>Modular Computer Systems, Inc.</td>
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<tr>
<td>Motorola Computer Group</td>
<td>MOT1086, MOT5618</td>
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<tr>
<td>NCR Corporation</td>
<td>NCR0554, NCR1448, NCR2047, NCR2805, NCR3061, NCR3311, NCR4518, NCR5333, NCR7830, NCR7549</td>
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<tr>
<td>NeXT Computer, Inc.</td>
<td>NXR0623</td>
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<td>Pyramid Technology Corporation</td>
<td>PYR1271, PYR3067, PYR3233, PYR4970, PYR8683</td>
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<td>Santa Cruz Operation Inc.</td>
<td>SCO3864, SCO3832, SCO4102, SCO5199, SCO6748, SCO8054, SCO9275</td>
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<tr>
<td>Sequent Computer Systems Inc.</td>
<td>SEC8754</td>
</tr>
<tr>
<td>Silicon Graphics, Inc.</td>
<td>SG15507, SG9297</td>
</tr>
<tr>
<td>Sun Microsystems Computer Corp.</td>
<td>SUN1065, SUN1442, SUN2031, SUN2277, SUN2930, SUN3272, SUN3402, SUN5684, SUN5782, SUN5970, SUN6602, SUN7188, SUN7793</td>
</tr>
<tr>
<td>SunSoft, Inc.</td>
<td>SUN0617, SUN2241, SUN3129, SUN3403, SUN4529, SUN5382, SUN6635, SUN6859, SUN8720, SUN9763</td>
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<tr>
<td>Unisys Corporation</td>
<td>UNI0505, UNI1798, UNI3690, UNI5711, UNI9063, UNI9060</td>
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<td>Univel</td>
<td>UNV0528, UNV2014, UNV3055, UNV3978, UNV9180</td>
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<tr>
<td>UNIX System Laboratories</td>
<td>USL2115, USL3610, USL6259</td>
</tr>
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<tr>
<th>SYSTEM SUPPLIERS</th>
<th>REFERENCE FILE #</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGI Computer, Inc.</td>
<td>EVR9091</td>
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<td>Alpha Systems Lab</td>
<td>SUN3403</td>
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<td>Amdahl Corporation</td>
<td>AMD5598</td>
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<td>Apple Computer Inc.</td>
<td>APP2482, APP3355, APP7204, APP7224, APP7235, APP8616, APP9125, APP9165</td>
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<td>AST Research, Inc.</td>
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<td>AT&amp;T</td>
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<tr>
<td>BULL S.A.</td>
<td>BUL2387, BUL6051</td>
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<td>Control Data Corporation</td>
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<td>Dell Computer Corporation</td>
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<td>Diamond Fire Incorporated</td>
<td>SCO5664, SCO8054</td>
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<td>SUN617, SUN1442, SUN2031, SUN2277, SUN2930, SUN3272, SUN3402, SUN5684, SUN5782, SUN5970, SUN6602, SUN7188, SUN7793</td>
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<td>UNIX System Laboratories</td>
<td>USL2115, USL3610, USL6259</td>
</tr>
<tr>
<td>Zenith Data Systems</td>
<td>SCO3832, SCO5199</td>
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</table>

5 - 3
Reference File #: AMD5598
Product Supplier: Amdahl Corporation
Product Tested: UTS System Version: 4 Release: 1
System Supplier: Amdahl Corporation
System Hardware: 5955M 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.
System Supplier: Apple Computer Inc.
System Hardware: Macintosh Model: llfx
PCTS: 151-1 Version: 1.1 - 04/26/91
APTL: 0342 Mindcraft, Inc. Date Issued: 05/24/91

Reference File #: APP3555
Product Supplier: Apple Computer Inc.
Product Tested: A/UX Version: 3.0 Release: March 9, 1992
System Supplier: Apple Computer Inc.
System Hardware: Workgroup Server Model: 80
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 #: APP7724
Product Supplier: Apple Computer Inc.
Product Tested: A/UX Version: 3.0 Release: March 9, 1992
System Supplier: Apple Computer Inc.
System Hardware: Workgroup Server Model: 80
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 #: APP7735
Product Supplier: Apple Computer Inc.
Supplier: Apple Computer Inc. Hardware: Macintosh Model: Iics
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 #: APP9616
Product Supplier: Apple Computer Inc.
Supplier: Apple Computer Inc. Hardware: Macintosh Model: Iics
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: 06/11/92

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 #: ATT1586
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 - 05/21/92
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 #: BUL6005
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 XL 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
System Supplier: Control Data Corporation
System Hardware: Control Data 4000 Model: 4660MP
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
System Supplier: Control Data Corporation
System Hardware: Control Data 4000 Model: 4330-250
C Compiler: EP/IX C Language RISCompiler 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 #: CDC5759
Product Supplier: Control Data Corporation
System Supplier: Control Data Corporation
System Hardware: Control Data 4000 Model: 4680
C Compiler: EP/IX C Language RISCompiler 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 #: DEC0658
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
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 #: DEC5784
Product Supplier: Digital Equipment Corporation
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
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: 0343 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
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
System Supplier: Digital Equipment Corporation
System Hardware: DECstation Model: 5000/250
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 #: DEC9248
Product Supplier: Digital Equipment Corporation
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
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
Reference File #: DGC2542
Product Supplier: Data General Corporation
Product Tested: DG/UX Version: 5.4
System Supplier: Data General Corporation
System Hardware: Avilion 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: 09/01/91

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: Avilion AV/5304600 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: Avilion 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: 09/01/91

Reference File #: DGC703
Product Supplier: Data General Corporation
Product Tested: DG/UX Version: 4.32
System Supplier: Data General Corporation
System Hardware: Avilion AV/400/4000 Model: AV/412
C Compiler: GNU C Compiler for AviION Systems Version: 1.37.23
PCTS: 151-1 Version: 1.1 - 04/26/91
APTL: 0342 Mindcraft, Inc. Date Issued: 05/24/91

Reference File #: DGC9391
Product Supplier: Data General Corporation
Product Tested: DG/UX Version: 4.32
System Supplier: Data General Corporation
System Hardware: Avilion AV/400/4000 Model: AV/410
C Compiler: GNU C Compiler for Avion 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: Avilion AV/8000 Model: AV/8240
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 #: ENC8987
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 #: EVR9001
Product Supplier: ESIX/Everex Systems, Inc.
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.
System Supplier: ESIX/Everex Systems, Inc.
System Hardware: Everex Model: 3000S 366/33
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: CUX Release: 5.3
System Supplier: Harris Corporation, Computer Systems Division
System Hardware: Night Hawk Model: HH4802
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: 8675
C Compiler: HP C Compiler Version: A 08.71 Release: 10/06/91
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0346 Hewlett-Packard Company Date Issued: 12/06/92

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: 8675
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 Company Date Issued: 12/06/92

Reference File #: HPC0535
Product Supplier: Hewlett-Packard Company
System Supplier: Hewlett-Packard Company
System Hardware: Domain/OS 4000 Model: DN4500
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0346 Hewlett-Packard Company Date Issued: 09/2/92

Reference File #: HPC0603
Product Supplier: Hewlett-Packard Company
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 700 Model: 735
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 2/19/93
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
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 700 Model: 720
PCTS: 151-1 Version: 1.1 - 09/11/91
APTL: 0346 Hewlett-Packard POSIX Conformance Test Center Date Issued: 01/29/92

Reference File #: HPC2540
Product Supplier: Hewlett-Packard Company
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 #: HPC2698
Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 8.02 Release: 10/06/91
System Supplier: Hewlett-Packard Company
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
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
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 800 Model: 847S
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
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
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 700 Model: 720
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0346 Hewlett-Packard POSIX Conformance Test Center Date Issued: 04/17/92

Reference File #: HPC6921
Product Supplier: Hewlett-Packard Company
Product Tested: HP-UX Version: 8.00 with PHCO_0800 (Patch)
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 400 Model: 400S
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0346 Hewlett-Packard POSIX Conformance Test Center Date Issued: 12/08/92

Reference File #: HPC6906
Product Supplier: Hewlett-Packard Company
System Supplier: Hewlett-Packard Company
System Hardware: HP9000 Series 700 Model: 715
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
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 #: HPCC716
Product Supplier: Hewlett-Packard Company
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 #: HPG0398
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
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: Compag Computer Corporation
System Hardware: ProLinea Model: 4/33
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 Version: T302.0 Rel: 12/2/92
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus, Inc. Date issued: 2/19/93
Reference File #: NCR0554
Product Supplier: NCR Corporation
Product Tested: NCR UNIX System V Ver: Release 4 Rel: 4.0.4
System Tested: NCR Corporation
System Hardware: NCR 3B2 R3 Series Model: 3B2/1000 R3
(Military ID: 3B2/600 GR)
C Compiler: NCR 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 - 05/21/92
APTL: 0343 DataFocus, Inc. Date Issued: 06/26/92

Reference File #: NCR3805
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 - 05/21/92
APTL: 0343 DataFocus, Inc. Date Issued: 06/26/92

Reference File #: NCR5061
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: 3345
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 UNIX 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 - 05/21/92
APTL: 0343 DataFocus, Inc. Date Issued: 06/26/92

Reference File #: NCR4518
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: 3550
C Compiler: NCR C Development Toolkit Release: 2
PCTS: 151-1 Version: 1.1 - 05/21/92
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 - 05/21/92
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
Reference File #: PYR4970
Product Supplier: Pyramid Technology Corporation
Product Tested: DataCenter/OSX Version: dcosx 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 #: PYR8863
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 #: SC03664
Product Supplier: Santa Cruz Operation Inc.
Product Tested: SCO Open Desktop Version: 2.0
System Supplier: Diamond Flower Incorporated
System Hardware: V/386
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 #: SC03832
Product Supplier: Santa Cruz Operation Inc.
Product Tested: SCO UNIX System V/386 Version: Release 3.2
System Supplier: Diamond Flower Incorporated
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 #: SC04102
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 #: SC05199
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: 2p
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 #: SC06748
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 #: SC08054
Product Supplier: Santa Cruz Operation Inc.
Product Tested: SCO Open Desktop Version: 2.0
System Supplier: Diamond Flower Incorporated
System Hardware: V/386
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 #: SC09875
Product Supplier: Santa Cruz Operation Inc.
Product Tested: SCO UNIX System V/386 Version: 3.2
System Supplier: UNISYS Corporation
System Hardware: PW 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: DYNNIX/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 #: SG15507
Product Supplier: Silicon Graphics, Inc.
Product Tested: IRIX Version: 4.0.5
System Supplier: Silicon Graphics, Inc.
System Hardware: Iris Model: Indigo
C Compiler: IRIX 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 #: SG19297
Product Supplier: Silicon Graphics, Inc.
Product Tested: IRIX Version: 4.0.5
System Supplier: Silicon Graphics, Inc.
System Hardware: Iris Model: Indigo
C Compiler: IRIX 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: SPARClstation IPC Model: GX
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 10 Model: 4/30
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 #: 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: May 20, 1992
PCTS: 151-1 Version: 1.1 - 01/22/92
APTL: 0342 Mindcraft, Inc. Date Issued: 10/08/92

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
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 10/08/92

Reference File #: SUN2920
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
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0342 Mindcraft, Inc. Date Issued: 10/08/92

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
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: SPARCstation 10 Model: 54
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: 10/08/92

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: SPARCstation IPX Model: ASL543
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.
System Supplier: Sun Microsystems Computer Corporation, Inc.
System Hardware: SPARCstation IPX Model: GX
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
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: SPARCstation IPX Model: GX
C Compiler: Sun C Compiler Version: 2.0.1 Release: October 3, 1992
PCTS: 151-1 Version: 1.1 - 05/21/92
APTL: 0343 DataFocus Incorporated Date Issued: 09/02/92

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: SPARCstation 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: 10/16/92

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: SPARCstation 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
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Reference File #: UN9080
Product Supplier: Unisys Corporation
Product Tested: CTOS II Version: 3 Release: 3
System Supplier: Unisys Corporation
System Hardware: UNIX System U 6000 Series Model: U 6000/55
C Compiler: Microsoft C Version: 6.0
PCTS: 151-1 Version: 1.1 - 07/01/91
APT: 0342 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 4632)
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)
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
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.
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
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
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.

BULL SA / Laboratoire POSIX
1 rue de Provence / BP 208
38432 ECHIROLLES CEDEX

Contact: Mr. Georges Chardon
Phone: (33) 78 39 75 93
email: lab@freac.bull.fr

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

Contact: Mr. Matt Einseln
Phone: 703-631-6770
email: mte@datafocus.com

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

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@osi.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 producable 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), Modern 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

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<td>151-2DEC002</td>
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NIST POSIX VALIDATED PRODUCTS, Continued

151-2DECO03 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
AJP, 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

151-2DECO04 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
AJP, 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

151-2DECO05 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.

151-2DECO06 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.

151-2DGCO01 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: goe 2.4.5.6
APTL: 100342 Mindcraft, Inc.

151-2HFC001 Issued: 05/12/94 Type: Native
Product Supplier: Hewlett-Packard Company
Product: HP-UX Release 9.05 with patches PHCO_3869, PHCO_4152,
and PHKL 4149
PCD: POSIX Conformance Document, HP 9000 Computers, Third
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.

151-2HFC002 Issued: 05/12/94 Type: Native
Product Supplier: Hewlett-Packard Company
Product: HP-UX Release 9.05 with patches PHCO_3869, PHCO_4152,
and PHKL 4149
PCD: POSIX Conformance Document, HP 9000 Computers, Third
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.

151-2HFC003 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
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.

151-2HFC004 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
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.

151-2HFC005 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
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 10.00.51
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 10.09.51
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 10.09.51
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
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
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
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: 03/06/94 Type: Native
Product Supplier: International Business Machines Corporation
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, U425487, U425984, U425987, 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, U425487, U425984, U425987, 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, U425487, U425984, U425987, 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.
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<th>NIST POSIX VALIDATED PRODUCTS, Continued</th>
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<td>Computer Hardware Product: ES/9000/610</td>
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<td>C Compiler: IBM SAA AD/Cycle® C/C++ Version 1.1 Release 2</td>
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<td>Product Supplier: Intergraph Corporation</td>
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<td>Product: CLIX UNIXBOOT, Version 07.05.17.00, Release 22-FEB-1994</td>
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<td>PCD: CLIX POSIX Conformance Document, July 1994</td>
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<td>Computer Hardware Product: Intergraph 2800 Series Workstation, Model 2830</td>
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<td>C Compiler: CLIPPER Advanced Optimizing C Compiler, Version 07.05.01.61, Release 03-MAR-1994</td>
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<td><strong>151-2MSC001</strong> Issued: 04/12/94 Type: Cooperating Hosted</td>
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<td>Product Supplier: Microsoft Corporation</td>
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<td>Host &amp; Development Operating System Supplier: Microsoft Corporation</td>
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<td>Host &amp; Development Operating System: Windows NT Version 3.1</td>
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<td>C Compiler: Microsoft® C Centaur Optimizing Compiler Version 8.00.081</td>
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<td>GTI - Not Provided by Product</td>
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<td>Computer Hardware Supplier: Compaq</td>
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<td><strong>151-2MSC003</strong> Issued: 04/12/94 Type: Cooperating Hosted</td>
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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
GTL - NOT Provided by Product   MC - NOT Provided by Product
MFS - NOT Provided by Product   AP - NOT Provided by Product
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
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
GTL - NOT Provided by Product   MC - NOT Provided by Product
MFS - NOT Provided by Product   AP - NOT Provided by Product
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.

151-2MSC006 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
GTL - NOT Provided by Product   MC - NOT Provided by Product
MFS - NOT Provided by Product   AP - NOT Provided by Product
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
GTL - 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
GTL - 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
GTL - 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
GTL - 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.

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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.

151-2MSC0012 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.

151-2MSC0013 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.

151-2MSC0014 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.

151-2MSC0015 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: DX4/75
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.

151-2MSC0016 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: Ascendia 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.

151-2MSC0017 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.

151-2MSC0018 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

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### NIST POSIX VALIDATED PRODUCTS, Continued

<table>
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<tr>
<th>Product:</th>
<th>Supplier:</th>
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<td>GTI - Not Provided by Product</td>
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<td>MFS - Not Provided by Product</td>
<td>AP - Not Provided by Product</td>
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</tr>
</tbody>
</table>

**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**
**Issue Date:** 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**
**MFS - 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**
**Issue Date:** 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**
**MFS - 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
**APTL:** 100342 Mindcraft, Inc.

**151-2MSC0021**
**Issue Date:** 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**
**MFS - 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
**APTL:** 100342 Mindcraft, Inc.
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 Minclair, 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 - Not Provided 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 Minclair, 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 486DX/66
C Compiler: SCO ODT Development System Release 3.0 C Compiler, with SCO XPG 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, Intel 486DX/66
C Compiler: SCO ODT Development System Release 3.0 C Compiler, with SCO XPG 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 XPG 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 XPG 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 XPG 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: 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 XPG 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 XPG 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 XPG 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
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.

151-2SE0001 Issued: 04/12/94 Type: Native
Product Supplier: Sequent Computer Systems Inc.
Product: DYNIX/pntx Version 4.0.0
PCD: DYNIX/pntx 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.

151-2SE0002 Issued: 04/12/94 Type: Native
Product Supplier: Sequent Computer Systems Inc.
Product: DYNIX/pntx Version 2.1.1
PCD: DYNIX/pntx 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.

151-2SPA001 Issued: 08/02/95 [07/07/95] 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
MFS - 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
MFS - 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.

151-2SUN004 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
MFS - Supported by Product
Computer Hardware Supplier: Sun Microsystems Computer Corporation, Inc.
Computer Hardware Product: SPARCstation 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
MFS - 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
MFS - 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
MFS - 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
GTI - Supported by Product
MFS - Supported by Product
Computer Hardware Supplier: Compaq Computer Corporation, Inc.
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
MFS - 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
MFS - 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
Part No: 801-6735-10
GTI - Supported by Product
MFS - 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
GTI - Supported by Product
MFS - Supported by Product
Computer Hardware Supplier: Dell Computer Corporation
Computer Hardware Product: 468T
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
GTI - Supported by Product
MFS - 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
GTI - Supported by Product
MFS - 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
GTI - Supported by Product
MFS - 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
GTI - Supported by Product
MFS - 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
MFS - 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
MFS - 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
Part No: 801-6735-10
GTI - Supported by Product
MFS - Supported by Product
Computer Hardware Supplier: Sun Microsystems Computer Corporation
Computer Hardware Product: SPARCcenter 2000
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
Part No: 801-6735-10
GTI - Supported by Product
MFS - 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
Part No: 801-6735-10
GTI - Supported by Product
MFS - 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.

5 - 26
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
      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
      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
      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
      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
      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: 06/12/95  Type: Native
Product Supplier: SunSoft, Inc.
   Product: Solaris 2.4
      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
      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
      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
      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 POSIX1, Third Edition
      GTI - Not provided by Product MC - Not provided by Product
      MFS - Not provided 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.
<table>
<thead>
<tr>
<th>Product Number</th>
<th>Issue Date</th>
<th>Type</th>
<th>Product Supplier</th>
<th>Product Description</th>
<th>PCD</th>
<th>Conformance Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>151-2TAN002</td>
<td>05/12/95</td>
<td>Native</td>
<td>Tandem Computers Incorporated</td>
<td>Tandem NonStop Kernel Release D30, product SA73 and Open System Services Run-Time Environment, product SA16 with IPMs T6333AAE, 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</td>
<td>Open System Services Conformance document for POSIX 1, Third Edition</td>
<td></td>
</tr>
<tr>
<td>151-2UNI003</td>
<td>11/15/94</td>
<td>Native</td>
<td>Unisys Corporation</td>
<td>Product: Dynix/ptx Release 4.0.0</td>
<td>Dynix/ptx POSIX.1 Conformance Specification Part Number: 74410861-000</td>
<td>GTI - Supported by Product MC - Supported by Product MFS - Supported by Product AP - Supported by Product Computer Hardware Supplier: Unisys Corporation Host Operating System: Unix System V Release 4 Standard C Development Environment Rev. 1.3 C Compiler: ptx/C 4.0.0</td>
</tr>
</tbody>
</table>

# NIST POSIX Validated Products, Continued

**Product:** Tenon Intersystems

**Product Number:** 151-2TEN001

**Issue Date:** 10/25/94

**Type:** Hosted

**Product Supplier:** Tenon Intersystems

**Product Description:**
- **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.
  - **Host Operating System:** MacOS 7.1.2P
  - **C Compiler:** gcc 2.5.8

**APTL:** 100342 Mindcraft, Inc.

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**Product:** Unisys Corporation

**Product Number:** 151-2UNI001

**Issue Date:** 12/02/93

**Type:** Native

**Product Supplier:** Unisys Corporation

**Product Description:**
- **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
  - **Host Operating System:** Unix System V Release 4 Standard C Development Environment Rev. 1.2
  - **C Compiler:** gcc 2.5.8

**APTL:** 100342 Mindcraft, Inc.

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**Product:** Unisys Corporation

**Product Number:** 151-2UNI002

**Issue Date:** 12/02/93

**Type:** Native

**Product Supplier:** Unisys Corporation

**Product Description:**
- **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
  - **Host Operating System:** Unix System V Release 4 Standard C Development Environment Rev. 1.2
  - **C Compiler:** gcc 2.5.8

**APTL:** 100342 Mindcraft, Inc.

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**Product:** Unisys Corporation

**Product Number:** 151-2UNI003

**Issue Date:** 11/15/94

**Type:** Native

**Product Supplier:** Unisys Corporation

**Product Description:**
- **Product:** Dynix/ptx Release 4.0.0
- **PCD:** Dynix/ptx POSIX.1 Conformance Specification Part Number: 74410861-000

**APTL:** 100342 Mindcraft, Inc.

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**Product:** Unisys Corporation

**Product Number:** 151-2UNI004

**Issue Date:** 11/17/94

**Type:** Native

**Product Supplier:** Unisys Corporation

**Product Description:**
- **Product:** Unix System V Release 4 Revision 1.3
- **PCD:** Unix System V Release 4.0 POSIX Conformance Programmer's Guide Part Number: 39149430-400

**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: U8000/500 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 151-2req 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 151-1req.

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 151-2req 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 151-1req.
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

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.

<table>
<thead>
<tr>
<th>MANUFACTURER ADDRESS</th>
<th>PRODUCT</th>
<th>VALIDATION DATE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Engineering Concepts, Inc. 1198 Pacific Coast Highway #D-505 Seal Beach, CA 90740 -Mark Olson (310) 379-1189</td>
<td>MODEM LOCK version 1.0 (firmware) and KEYXL8 version 1.0 (software) (Encryption Only)</td>
<td>5/26/94</td>
<td>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.</td>
</tr>
<tr>
<td>Advanced Micro Devices, Inc. 4115 Freiderich Lane Mail Stop 135 Austin, TX 78744 -Patrick Soheili (408) 749-2161</td>
<td>AmZ8068 (also known as Am9518)</td>
<td>1/28/81</td>
<td>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.</td>
</tr>
<tr>
<td>Algorithmic Research, Ltd. 15 Gush Etzion Street 54030 Givat Shmuel, Israel -Mr. Ilan Zisser 972-3+532-2799</td>
<td>AR DES - Intel 80x86 (software)</td>
<td>6/23/95</td>
<td>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, CryptoServer, and CryptoSafe.</td>
</tr>
<tr>
<td>American Telephone and Telegraph Company (AT&amp;T) 6612 E. 75th Street P.O. Box 1008 Indianapolis, IN 46206 -Ken Zempol (908) 658-6870</td>
<td>AT&amp;T Smart Card Version 2.11/DES</td>
<td>5/3/91</td>
<td>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. This version of the AT&amp;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.</td>
</tr>
<tr>
<td></td>
<td>AT&amp;T Smart Card Version 3.0/DES (5E1)</td>
<td>7/19/91</td>
<td></td>
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</table>


<table>
<thead>
<tr>
<th>MANUFACTURER ADDRESS</th>
<th>PRODUCT</th>
<th>VALIDATION DATE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Telephone and Telegraph</td>
<td>AT&amp;T Mark E DES Key Generator, PN ON493049-1X</td>
<td>6/3/92</td>
<td>Not Available</td>
</tr>
<tr>
<td>AT&amp;T Guiford Center I-85 &amp; Mt. Hope Church Road McLeansville, NC 27420 B.F. Bailey (910) 279-3779 M. Zugay (910) 279-3779</td>
<td>AT&amp;T Mark ET DES Key Generator Part No. AN10014-1</td>
<td>11/2/92</td>
<td>Not Available</td>
</tr>
<tr>
<td>The Analytic Sciences Corporation 700 Boulevard South, Suite 201 Huntsville, AL 35802 James Moore (205) 726-8718</td>
<td>DESafe version 1.0 (software)</td>
<td>8/26/94</td>
<td>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 &quot;on the fly&quot; during the file transfer. A stand-alone version of DESafe is employed by BBS users to decrypt (encrypt) downloaded (uploaded) files.</td>
</tr>
<tr>
<td>AT&amp;T Whippany Road, N.J. 07981 William Oechsger (201) 898-1198</td>
<td>AT&amp;T T7000A Digital Encryption Processor</td>
<td>4/22/86</td>
<td>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.</td>
</tr>
<tr>
<td>AT&amp;T Bell Laboratories 25 Linsley Drive Room 2B-309 Morristown, N.J. 07960 William Oechsger (201) 898-1198</td>
<td>DEP229ER (WE229ER)</td>
<td>9/6/83</td>
<td>3.5 micron NMOS technology; 40-pin DIP; encryption modes - ECB, CBC, CFB, OFB; throughput rate of 117K ciphering operation/second.</td>
</tr>
<tr>
<td>Arkansas Systems Inc. 8901 Kanis Road Little Rock, AR 72205-6498 David H. Bishop (501) 227-8471</td>
<td>DES-MATE</td>
<td>7/6/89</td>
<td>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.</td>
</tr>
<tr>
<td>Bokler Software Corporation 1570 Pacheco, Suite E-4 Santa Fe, NM 87505 R.D. Moore</td>
<td>DEScipher/VBX 1.1 (software)</td>
<td>8/17/95</td>
<td>A modular, re-usable DEC implementation packaged as a Visual Basic control (V BX); can be used in Visual Basic or C++ applications; supports all 4 DEC modes, all VB data types, and multiple instantiation.</td>
</tr>
<tr>
<td>Burroughs Corporation Federal and Special Systems Group P.O. Box 517 Paa l, PA 19301 (215) 648-2556</td>
<td>PN 2664-9723</td>
<td>3/16/78</td>
<td>Not Available</td>
</tr>
<tr>
<td>Chase Manhattan Bank, N.A. 199 Water Street 12th Floor New York, New York 10081</td>
<td>Chase Encryption Device 1</td>
<td>7/24/84</td>
<td>Not Available</td>
</tr>
<tr>
<td>Collins Telecommunications Collins Defense Communications 350 Collins Road, NE Mail Stop 120-105 Cedar Rapids, Iowa 52498 Jim Perkins 395-5773</td>
<td>765-5914-001</td>
<td>10/15/77</td>
<td>pMOS chip with 40 μsec 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.</td>
</tr>
<tr>
<td></td>
<td>Voice Privacy Device VP430</td>
<td>10/6/81</td>
<td>Imbedded encryption device for commercial hand-held (319) (310) communications devices.</td>
</tr>
</tbody>
</table>
## DES Validated Devices, Continued

<table>
<thead>
<tr>
<th>MANUFACTURER ADDRESS</th>
<th>PRODUCT</th>
<th>VALIDATION DATE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
</table>
| Computer Elektronik Infosys of America SuperCrypt  
512-A Herndon Parkway  
Herndon, VA 22070  
- A. Mark Brown  
(703) 435-3800 | CryptCard | 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. |
| 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. |
| 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  
Suit 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  
ADI DES revision 1.0  
1 Mountain View Road  
Lynchburg, VA 24502  
-Dan Schwed  
(804) 948-6055 | 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. |
<table>
<thead>
<tr>
<th>MANUFACTURER ADDRESS</th>
<th>PRODUCT</th>
<th>VALIDATION DATE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fairchild Semiconductor 2000 Century Plaza Columbia, MD 21044 Sales Department (301) 730-1510</td>
<td>9414 Chip Set</td>
<td>12/20/78</td>
<td>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.</td>
</tr>
<tr>
<td>Front Line Software P.O. Box 217 Lowell, MA 01853 -William Graham (617) 452-3352</td>
<td>726-8064 PROM Device</td>
<td>12/1/86</td>
<td>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.</td>
</tr>
<tr>
<td>GEC-Marconi Limited Ltd. Brown's Lane, The Airport Portsmouth, Hampshire PO3 5PH England -Roger Madden Cycomm Corporation (703) 352-4741</td>
<td>DM800</td>
<td>3/1/93</td>
<td>The DM800 is a module that can be added to an ordinary analogue radio in order to provide communication security by digital encryption.</td>
</tr>
<tr>
<td>GEMPLUS CARD International 656 Quince Orchard Road Suite 610 Gaithersburg, MD 20878 -Gilles Lisimaque (301) 990-8800</td>
<td>MCOS16K EEPROM/DES</td>
<td>3/18/91</td>
<td>A multi-application smart card which complies with the ISO standard 7816 (parts 1, 2, and 3) for Integrated Circuit cards with contacts.</td>
</tr>
<tr>
<td>General Electric Company Mountain View Road Lynchburg, VA 24502 -Jim Elder (804) 948-6187</td>
<td>Part Number 19B801375</td>
<td>6/28/85</td>
<td>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.</td>
</tr>
<tr>
<td>Glenco Engineering, Inc. 270 Lexington Drive Buffalo Grove, IL 60089-6930 -D. Wade Clark (708) 808-0300</td>
<td>Glen-DES PN GL306051</td>
<td>5/8/92</td>
<td>The Glen-DES is a compact 20 pin design, using low power CMOS technology, operating at 3µs 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.</td>
</tr>
<tr>
<td>IBM Corporation Federal Systems Division WK4/988 P.O. Box 100 Kingston, NY 12401 -Robert Elander (914) 385-6692</td>
<td>4402182</td>
<td>11/1/77</td>
<td>This card used in terminal equipment; the chip uses technology with PLA control to implement CBC.</td>
</tr>
<tr>
<td></td>
<td>P/N 8270094 using DES Chip</td>
<td>8/25/78</td>
<td>This card is used in 3845 and 3846 equipment for 8-bit CFB.</td>
</tr>
<tr>
<td></td>
<td>P/N 5898057 (originally 8269206) Two TTL cards - 8632242 and 8679176</td>
<td>9/21/79</td>
<td>Will operate at least at 1.5 Mbytes 360 channel rate; card set is used in 3848 cryptographic unit; uses &quot;Emerald-5&quot; technology.</td>
</tr>
<tr>
<td>MANUFACTURER ADDRESS</td>
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<tr>
<td>IBM Corporation</td>
<td>4754 Security Interface Unit and the Personal Security Card</td>
<td>10/10/90</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>IBM BDS Portable-C DES, version 1.0 (software)</td>
<td>7/1/94</td>
<td>Portable C-language implementation of DES, used in products developed by IBM Branch Delivery Systems.</td>
</tr>
<tr>
<td>IBM Corporation</td>
<td>IBM ES/9000 Integrated Crypto-Graphic Feature</td>
<td>2/26/93</td>
<td>The Integrated Cryptographic Feature is available for inclusion on the IBM ES/9000 processors in support of IBM's cryptographic architecture.</td>
</tr>
<tr>
<td>Information Security Corporation</td>
<td>DES module/Intel, version 3.0 (software)</td>
<td>8/9/94</td>
<td>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&amp;T Surity Cryptographic Development Kits on those platforms.</td>
</tr>
<tr>
<td></td>
<td>DES module/68K, version 3.0 (software)</td>
<td>8/9/94</td>
<td>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&amp;T Surity Cryptographic Development Kits for Macintosh.</td>
</tr>
<tr>
<td></td>
<td>DES module/C, version 2.0 (software)</td>
<td>8/16/94</td>
<td>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&amp;T Surity Cryptographic Development Kits for Sun, DEC, HP and other UNIX platforms.</td>
</tr>
<tr>
<td>Intel</td>
<td>8294</td>
<td>1/3/78</td>
<td>Algorithm is microcode which is burned into a 1 Kbyte ROM on a 5 volt, 40-pin chip driven by a 8042 microprocessor.</td>
</tr>
<tr>
<td></td>
<td>8294A</td>
<td>6/20/82</td>
<td>Same as the 8294 except for a maximum data transfer rate of 400 bytes per second.</td>
</tr>
<tr>
<td>John E. Holt &amp; Associates</td>
<td>Krypton Firmware</td>
<td>2/12/86</td>
<td>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.</td>
</tr>
<tr>
<td>Jones Futurex</td>
<td>SAFE 300</td>
<td>8/12/93</td>
<td>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.</td>
</tr>
<tr>
<td>MANUFACTURER/ADDRESS</td>
<td>PRODUCT</td>
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</tr>
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</tr>
<tr>
<td>Lexicon</td>
<td>LEX-POS (Model 600)</td>
<td>11/28/84</td>
<td>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.</td>
</tr>
<tr>
<td>Logimens Inc.</td>
<td>DESDLL.DLL 2.0 E/D Engine (software)</td>
<td>7/25/94</td>
<td>DESDLL.DLL is the software cryptoengine 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 &amp; drop capabilities, file compression, Defense related secure file deletion, etc.</td>
</tr>
<tr>
<td>LSI Logic/Dataco AS</td>
<td>Dataco L5A4043 2030025402</td>
<td>1/12/90</td>
<td>Custom DES IC was manufactured by LSI Logic for Dataco. The DES chip is designed for optional use in SeaNet local area network products.</td>
</tr>
<tr>
<td>Matsushita Electronic Components Co.</td>
<td>EBC 1642 IC Card</td>
<td>3/13/91</td>
<td>Card is designed to be a high security external storage media housing an 8 bit CPU and 64 Kbit EEPROM.</td>
</tr>
<tr>
<td>Micro Card Technologies, Inc.</td>
<td>Micro Card TB100 Integrated Circuit Card</td>
<td>9/19/90</td>
<td>A multi-application integrated circuit card which can simultaneously support several application data files. Ciphering and deciphering functions may be used to encrypt or decrypt external messages using DES.</td>
</tr>
<tr>
<td>Motoroza</td>
<td>TRAP 5200 System</td>
<td>4/17/90</td>
<td>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.</td>
</tr>
<tr>
<td>Motoroza</td>
<td>MC6859 (originally MGD68NE)</td>
<td>2/11/80</td>
<td>Si-gate depletion mode, nMOS 24-pin DIP using single 5 volt power supply; implements ECB and CFB.</td>
</tr>
<tr>
<td>Motoroza</td>
<td>T5W-2</td>
<td>11/12/81</td>
<td>Special purpose for internal use only.</td>
</tr>
</tbody>
</table>
### DES Validated Devices, Continued

<table>
<thead>
<tr>
<th>MANUFACTURER</th>
<th>ADDRESS</th>
<th>PRODUCT</th>
<th>DATE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>-Kelly Mann</td>
<td>(708) 576-3610</td>
<td>DES21X81V2.2 (firmware)</td>
<td>2/9/95</td>
<td>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.</td>
</tr>
<tr>
<td>Newbridge Microsystems</td>
<td>603 March Road Kanata, Ontario K2K 2M5 DES Product Manager (613) 592-0714</td>
<td>CA95C</td>
<td>9/8/93</td>
<td>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.</td>
</tr>
<tr>
<td>Nixdorf Computer Corporation</td>
<td>168 Middlesex Turnpike Burlington, MA 01803 -Kevin Madden (617) 890-3600</td>
<td>Data Security Device (DSD 9612)</td>
<td>7/2/91</td>
<td>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.</td>
</tr>
<tr>
<td>Northern Telecom</td>
<td>3705 35th St. NE Calgary, Alberta T1Y 6C2 -Paul Provencal (613) 763-8014</td>
<td>VEM Module</td>
<td>1/7/80</td>
<td>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.</td>
</tr>
<tr>
<td>-Roland Lockhart</td>
<td>Bell Northern Research, Ltd. (613) 763-5367</td>
<td>BNR 64-bit Cipher Feedback Mode Module, version 1.0 (firmware)</td>
<td>7/19/94</td>
<td>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.</td>
</tr>
<tr>
<td>Racal-Guardata Inc.</td>
<td>480 Spring Park Place Herndon, VA 22070 -Thomas J. Mitchell (703) 471-0892 (800) 521-6261</td>
<td>Entrust DES 32-2/64K Software Module, Version 1.1</td>
<td>9/13/94</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Datacryptor</td>
<td>1/7/80</td>
<td>Stand alone equipment with public key management remote distribution of master keys.</td>
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<tbody>
<tr>
<td>Research In Motion 180 Columbia Street West 190</td>
<td>Research In Motion DES Library, version 1.0 (software)</td>
<td>12/16/94</td>
<td>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.</td>
</tr>
<tr>
<td>Waterloo, Ontario N2L 3L3</td>
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<tr>
<td>-Herb Little (519) 888-7465</td>
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<tr>
<td>Rothenbuhler Engineering P.O. Box 708</td>
<td>CLS Series 5200 Encryption Module</td>
<td>3/19/91</td>
<td>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.</td>
</tr>
<tr>
<td>2191 Rhodes Road</td>
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<tr>
<td>Sedro Woolley, WA 98284-0708</td>
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<tr>
<td>-Andrew Benson (206) 856-0836</td>
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<tr>
<td>Secur-Data Systems, Inc.</td>
<td>DESPLEX</td>
<td>2/2/89</td>
<td>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 annotating data in an alarm monitoring facility.</td>
</tr>
<tr>
<td>Omega Center 7340 Executive Way, Suite R</td>
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<tr>
<td>Frederick, MD 21701</td>
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<tr>
<td>-Ronald Baum (301) 698-9955</td>
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<tr>
<td>Secure Computing Corporation 2675 Long Lake Road</td>
<td>scte_des.c, version 1.7</td>
<td>4/22/94</td>
<td>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.</td>
</tr>
<tr>
<td>Roseville, MN 55113</td>
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<tr>
<td>-Ron Bohn (612) 628-2725</td>
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<tr>
<td>Texas Instruments, Inc.</td>
<td>TMS 99541</td>
<td>2/28/82</td>
<td>Preprogrammed TMS7020 8-bit single chip microprocessor; 40-pin DIP plastic package I/O pins are TTL compatible; master and active key registers.</td>
</tr>
<tr>
<td>P.O. Box 1443, M/S 736</td>
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<tr>
<td>Houston, TX 77001</td>
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<tr>
<td>-Mike Polen (713) 274-3635</td>
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<tr>
<td>TimeStep Corporation 600 March Road</td>
<td>TS95C40</td>
<td>12/16/94</td>
<td>32Mbps DES engine - operates in ECB, CBF, 1-bit and 8-bit CBF 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.</td>
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<tr>
<td>Kanata, Ontario K2K 2E6</td>
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<tr>
<td>-Tony Rosati (613) 599-3600</td>
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<tr>
<td>Transcrypt International, Inc. 4800 NW First Street</td>
<td>Transcrypt DES Subroutine &amp; Key Schedule v 1.00 (software)</td>
<td>11/14/94</td>
<td>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.</td>
</tr>
<tr>
<td>Lincoln, NE 68521</td>
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<tr>
<td>-Jim Gilley (402) 474-4800</td>
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<tr>
<td>UNIVAC</td>
<td>End-End/Mass Storage Encryptor</td>
<td>1/29/80</td>
<td>Prototype device for testing purposes only.</td>
</tr>
<tr>
<td>P.O. Box 3942</td>
<td></td>
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<tr>
<td>St. Paul, MN 55165</td>
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<tr>
<td>-Jim Nelson (612) 631-6728</td>
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</tbody>
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**DES Validated Devices, Continued**

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<tr>
<td>Virtual Open Network Environment Corp. 12300 Twinbrook Parkway Rockville, MD 20852 -George Thornton (301) 881-2297</td>
<td>V-ONE DES Module (software)</td>
<td>7/25/94</td>
<td>Smart card system for PC security, file encryption and decryption, user authentication, secure remote system logon, personal identification, and multilevel system access.</td>
</tr>
<tr>
<td>VLSI Technology, Inc. 8375 S. River Parkway Tempe, AZ 85284 -Ray Slusarczyk (602) 752-8574</td>
<td>VM007 - Data Encryption Processor</td>
<td>1/6/92</td>
<td>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.</td>
</tr>
<tr>
<td>VM009 Data Encryption Processor</td>
<td>1/11/93</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>Vobach Systems, Inc. 11114 Ashcroft Houston, TX 77096 -Dr. Miles Smither Circuit Concepts, Inc. (713) 331-2744</td>
<td>Shades DES, version 1.0 (software)</td>
<td>1/20/95</td>
<td>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.</td>
</tr>
<tr>
<td>Wells Fargo Security Products A Unit of Baker Protective Services 1010 North Glebe Road, Suite 680 Arlington, VA 22201 -William Martin (703) 247-4250</td>
<td>WP PN 5286/WP PN 5287</td>
<td>5/26/89</td>
<td>The monitor panels are intended for use in a monitoring station of a proprietary intrusion detection alarm system.</td>
</tr>
<tr>
<td>WD20C03 DES Device</td>
<td>5/19/87</td>
<td>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.</td>
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### 6.7 FIPS 113, Computer Data Authentication Message Authentication Code (MAC) Implementations

<table>
<thead>
<tr>
<th>Vendor/Contact</th>
<th>Implementation</th>
<th>Validated Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ACS Communications Systems Inc.</td>
<td>Personal Computer Security Module, PC2M-T</td>
<td>BINARY OPTION (FIPS 113)</td>
</tr>
<tr>
<td>Don Cole, (703) 471-0892</td>
<td>May 16, 1986</td>
<td></td>
</tr>
<tr>
<td>2. Federal Reserve Bank of Cleveland</td>
<td>Fedora Futures PC Encryption Board</td>
<td>BINARY OPTION (FIPS 113)</td>
</tr>
<tr>
<td>Cleveland, Ohio 44101</td>
<td>FRP PC MAC Processor</td>
<td>CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING</td>
</tr>
<tr>
<td>Dave Rich, (216) 678-2221</td>
<td>October 28, 1986</td>
<td></td>
</tr>
<tr>
<td>Mountain View, CA</td>
<td>Software Version 3.0</td>
<td></td>
</tr>
<tr>
<td>Out of Business</td>
<td>January 16, 1987</td>
<td></td>
</tr>
<tr>
<td>4. Codercard, Inc.</td>
<td>Personal Computer Security Adapter, CPS-300</td>
<td>BINARY OPTION (FIPS 113)</td>
</tr>
<tr>
<td>Rights transferred to LITRONICS Information Systems on Sept. 12, 1980 - see entry 23.</td>
<td>Argus, Version 1 Software</td>
<td>CODED CHARACTERS, ENTIRE MESSAGE, NO EDITING</td>
</tr>
<tr>
<td>LITRONICS Information Systems</td>
<td>February 26, 1987</td>
<td></td>
</tr>
<tr>
<td>Bob Gray, (714) 567-3444</td>
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<tr>
<td>6. Jones Futures, Inc.</td>
<td>Protecom Crypto Processor</td>
<td>BINARY OPTION (FIPS 113)</td>
</tr>
<tr>
<td>10933 Trade Center Drive</td>
<td>Protecom Device Driver &amp; Utilities, Version 0.6</td>
<td>CODED CHARACTERS, ENTIRE MESSAGE; NO EDITING</td>
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<tr>
<td>Rancho Cordova, CA 95670</td>
<td>March 27, 1987</td>
<td>CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; NO EDITING</td>
</tr>
<tr>
<td>Don Thompson, (916) 636-3872</td>
<td></td>
<td>CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; EDITING</td>
</tr>
<tr>
<td>6. Infomax Securities 6974 Sandpiper Place</td>
<td>Protecom Crypto Processor</td>
<td>BINARY OPTION (FIPS 113)</td>
</tr>
<tr>
<td>Carlsbad, CA 92009</td>
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<td>CODED CHARACTERS, ENTIRE MESSAGE, NO EDITING</td>
</tr>
<tr>
<td>David Howard, (619) 931-8787</td>
<td>May 11, 1987</td>
<td>CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; NO EDITING</td>
</tr>
<tr>
<td>7. Inter-Quest, Inc.</td>
<td>PORT-OF-ENTRY Computer Security System Vers. 1.1 (Software)</td>
<td>BINARY OPTION (FIPS 113)</td>
</tr>
<tr>
<td>1650 East Laser Drive</td>
<td>May 8, 1987</td>
<td>CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; NO EDITING</td>
</tr>
<tr>
<td>Fountain Hills, AZ 85268</td>
<td></td>
<td>CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; EDITING</td>
</tr>
<tr>
<td>Charles Redding, (602) 948-2560</td>
<td></td>
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<tr>
<td>8. Infomax Securities 6974 Sandpiper Place</td>
<td>Protecom Crypto Processor</td>
<td>BINARY OPTION (FIPS 113)</td>
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<tr>
<td>Carlsbad, CA 92009</td>
<td>Protecom Device Driver &amp; Utilities, Version 0.6</td>
<td>CODED CHARACTERS, ENTIRE MESSAGE; NO EDITING</td>
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<tr>
<td>David Howard, (619) 931-8787</td>
<td>May 11, 1987</td>
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<tr>
<td>342 Madison Avenue</td>
<td>June 29, 1987</td>
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<tr>
<td>Suite 10</td>
<td></td>
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</tr>
<tr>
<td>J. McKeef, (212) 567-7230</td>
<td></td>
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<td>10. Sytek, Inc.</td>
<td>MACbex</td>
<td>BINARY OPTION (FIPS 113)</td>
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<tr>
<td>Rights transferred to Aet Research, Inc. on January 28, 1988 - see entry 17</td>
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<tr>
<td>Aet Research</td>
<td>676 North First Street</td>
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<tr>
<td>San Jose, CA 95112</td>
<td></td>
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<tr>
<td>Linden Feldman, (408) 276-0820</td>
<td></td>
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<tr>
<td>11. Inter-Quest, Inc.</td>
<td>PORT-OF-ENTRY Computer Security System Vers 1.2 (Software)</td>
<td>BINARY OPTION (FIPS 113)</td>
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<tr>
<td>16508 East Laser Drive</td>
<td>Fountain Hills, AZ 85268</td>
<td>CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING</td>
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<tr>
<td>Charles Redding, (602) 948-2560</td>
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<td>CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; NO EDITING</td>
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<tr>
<td>12. Race-Guardata Limited</td>
<td>PC Security Module, RGL 600</td>
<td>BINARY OPTION (FIPS 113)</td>
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<tr>
<td>Richmond Court</td>
<td>RGL 600 Host PC C Driver Software, Version: V1.01</td>
<td>CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING</td>
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<tr>
<td>398 Fleet Road</td>
<td>88U England</td>
<td>CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; NO EDITING</td>
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<td>New York, New York</td>
<td>November 20, 1987</td>
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<tr>
<td>Paul Haliden, (262) 622144, England</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. The Chees Manhattan Bank, N.A.</td>
<td>C-FIMAS 16 Software, Version 1.0</td>
<td>BINARY OPTION (FIPS 113)</td>
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<tr>
<td>1 Seaport Plaza</td>
<td>December 6, 1987</td>
<td>CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING</td>
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<tr>
<td>11th Floor</td>
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<td>New York, New York</td>
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<td>CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; EDITING</td>
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<tr>
<td>Bob Martin, (212) 787-4038</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Atalia Corporation</td>
<td>Personal Computer Module, CPCM</td>
<td>BINARY OPTION (FIPS 113)</td>
</tr>
<tr>
<td>2304 Zanker Road</td>
<td>CPCM, HEX Software, Version</td>
<td></td>
</tr>
<tr>
<td>San Jose, CA 95131</td>
<td>OA 13-2043-01</td>
<td></td>
</tr>
<tr>
<td>Dale Hopkins, (408) 436-8850</td>
<td>January 11, 1988</td>
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<td>Vendor/Contact</td>
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<td>16. GN Telematic, Inc.</td>
<td>safeMatic 2000, K876-17527</td>
<td>BINARY OPTION (FIPS 113) CODED CHARACTERS; EN'TIRE MESSAGE; NO EDITING</td>
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<td>46 Manning Road</td>
<td>Coded Character Set</td>
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<tr>
<td>Billerica, MA 01821</td>
<td>Processing Software, Model</td>
<td>CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING</td>
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<tr>
<td>Paul Heggard, (617) 667-8644</td>
<td>K877-17012, Version A</td>
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<td>17. AeT Research</td>
<td>MACbox</td>
<td>BINARY OPTION (FIPS 113) CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING</td>
</tr>
<tr>
<td>676 North First Street</td>
<td>August 8, 1988</td>
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<tr>
<td>Suite 800</td>
<td></td>
<td>CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING</td>
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<tr>
<td>San Jose, CA 95112</td>
<td></td>
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<tr>
<td>June 30, 1987 as a Sytek, Inc.</td>
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</tr>
<tr>
<td>device - see entry 10.</td>
<td></td>
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</tr>
<tr>
<td>Linden Feldman, (408) 275-0820</td>
<td></td>
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<tr>
<td>18. Atalia Corporation</td>
<td>Personal Computer Module, MN-40-249</td>
<td>BINARY OPTION (FIPS 113)</td>
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<tr>
<td>2304 Zanker Road</td>
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<tr>
<td>San Jose, CA 95131</td>
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<td></td>
<td>September 26, 1988</td>
<td>CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING</td>
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<tr>
<td>Date Hopkins, (408) 436-8850</td>
<td></td>
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<td>19. Cypher Communications Inc.</td>
<td>CYCOM SCI AX3 6.01, Version 10084002</td>
<td>BINARY OPTION (FIPS 113)</td>
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<tr>
<td>4520 East-West Highway</td>
<td>February 2, 1989</td>
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<td>Suite 580</td>
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<td>Bethesda, MD 20814</td>
<td></td>
<td>CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; EDITING</td>
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<tr>
<td>Angel Bailey, (301) 662-6790</td>
<td></td>
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<td>20. Dial-Guard</td>
<td>Dial-Guard Remote Authenticator</td>
<td>BINARY OPTION (FIPS 113)</td>
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<tr>
<td>66 Koch Road/PO Box 7046</td>
<td>01-103, Version 2.0 Rev. 0</td>
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<td>March 6, 1989</td>
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<tr>
<td>Shun-Hwa Chang or Trone Miller, (416) 927-2222</td>
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<td>21. Okiok Data</td>
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<td>April 24, 1989</td>
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<td>Leval, Quebec, Canada H7T 187</td>
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<td>Claude Vigant, (514) 681-1681</td>
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<td>22. Racal-Guardata, Inc</td>
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<td>480 Spring Park Place</td>
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<td>Herndon, VA 22070</td>
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<td>Brian Bucholz, (703) 471-0892</td>
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<td>23. LITRONIC Information</td>
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<td>Systems 2850 Redhill Avenue</td>
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<td>Costa Mesa, CA 92626</td>
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<td>September 12, 1990</td>
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<tr>
<td>Bob Gray, (714) 545-6548</td>
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<td>James Prohaska, (703) 960-8068</td>
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<td>24. IBM Corporation Department 65K/B204-3</td>
<td>4755 Cryptographic Adapter ** 504-7060</td>
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<tr>
<td>1001 W.T. Harris Blvd.</td>
<td>October 15, 1990</td>
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<td>Charlotte, NC 28267</td>
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<td>Roger Evans, (704)</td>
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<td>25. IBM Corporation</td>
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<td>Charlotte, NC 28267</td>
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<td>26. IBM Corporation Department 65K/B204-3</td>
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<td>Roger Evans, (704)</td>
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<td>27. Cypher Communications</td>
<td>CYCOM SCI/SL 96 AXB 5.03, Version 10084012</td>
<td>BINARY OPTION (FIPS 113)</td>
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<td>Technology, Inc.</td>
<td>December 18, 1990</td>
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<td>16200 Shady Grove Rd.</td>
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<td>Suite 360</td>
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<tr>
<td>Rockville, MD 20850</td>
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<td>Angel Bailey, (301) 662-6790</td>
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<td>28. Cypher Communications Inc.</td>
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<td>BINARY OPTION (FIPS 113)</td>
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<td>Angel Bailey, (301) 662-6790</td>
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<td>Vendor/Contact</td>
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<td>Validated Options</td>
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<td>29. Digital Equipment Corporation</td>
<td>PIN Pad 201 SMD Model: P003-120-XX</td>
<td>BINARY OPTION (FIPS 113)</td>
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<td>Digital Drive - MK01-2/B08 Merrimack, NH 03054</td>
<td>March 25, 1991</td>
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<tr>
<td>Steve Lawrence, (603) 884-3446</td>
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<tr>
<td>30. Information Security Corporation</td>
<td>DES Module used in SpyProof</td>
<td>BINARY OPTION (FIPS 113)</td>
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<tr>
<td>1141 Lake Cook Road Suite D Deerfield, IL 60015</td>
<td>July 10, 1991</td>
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<tr>
<td>Michael Markowitz, (708) 405-0500</td>
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<td>31. Digital Signature Validated by Information Security Corporation</td>
<td>DES Module used in CryptMaster (3.20) and SecretAgent (1.00)</td>
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<tr>
<td>1115 N. East Avenue Oak Park, IL 60302</td>
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<tr>
<td>Michael Markowitz, (708) 405-0500</td>
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<td>32. The Exchange Systems</td>
<td>PCE-3000 IBM PS/2 Microchannel</td>
<td>BINARY OPTION (FIPS 113)</td>
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<tr>
<td>15396 SE 30th Place Bellevue, WA 98007-6584</td>
<td>January 8, 1992</td>
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<tr>
<td>Robert Adamson, (206) 644-7000 X256</td>
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<td>CODED CHARACTERS; EXTRACTED MESSAGE ELEMENTS; EDITING</td>
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33. The Exchange Systems | PCE-1000 ISA Adaptor | BINARY OPTION (FIPS 113) |
| 15396 SE 30th Place Bellevue, WA 98007-6584 | January 9, 1992 | CODED CHARACTERS; ENTIRE MESSAGE; NO EDITING |
| Robert Adamson, (206) 644-7000 X256 | | 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

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<th>Vendor/Contact</th>
<th>Implementation</th>
<th>Validated Options</th>
<th>Vendor/Contact</th>
<th>Implementation</th>
<th>Validated Options</th>
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<td>Hardware: Argus-PC, Model: CMS-100</td>
<td>No. of communicating pairs: 2 No. of manual (*KKs) per comm. pair: 2 Length of manual and auto. (*KKs): PAIR Key generation capability: YES Number of auto, distr. (*KKs) shared: 2 Number of KDS shared: UP TO 8 2 KDS in KSMs: SOMETIMES Send RSI messages: NOT TESTED Receive RSI messages: NOT TESTED Notarization of keys in KSMs: ALWAYS Send odd parity on keys in KSMs: ALWAYS Send IVs in KSMs: SOMETIMES Send encrypted IVs in KSMs: ALWAYS Send EDCs in RSIs and ESMs: ALWAYS Action if EDC received in RSIs and ESMs: NOT APPLICABLE Send EDKs in KSMs: SOMETIMES Send DSMs: YES Receive DSMs: YES IDA in DSM if only one KD can be shared: YES Role assumed: EITHER A OR B Automatic error recovery: TESTED</td>
<td>Software: Argus/MACE, Software: Version 1.0</td>
<td>September 23, 1988</td>
<td></td>
</tr>
<tr>
<td>Bob Gray, (714) 646-6649</td>
<td></td>
<td></td>
<td>James Prohaska, (703) 960-8068</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. TECHNICAL COMMUNICATIONS CORPORATION</td>
<td>Hardware: CX5000</td>
<td>No. of communicating pairs: 1 No. of manual (*KKs) per comm. pair: 1 Length of manual and auto. (*KKs): PAIR Key generation capability: YES Number of auto, distr. (*KKs) shared: 6 Number of KDS shared: 1 2 KDS in KSMs: NECESSARY Send RSI messages: NOT TESTED Receive RSI messages: TESTED Notarization of keys in KSMs: ALWAYS Send odd parity on keys in KSMs: ALWAYS Send IVs in KSMs: SOMETIMES Send encrypted IVs in KSMs: ALWAYS Send EDCs in RSIs and ESMs: ALWAYS Action if EDC received in RSIs and ESMs: NOT APPLICABLE Send EDKs in KSMs: NEVER Send DSMs: YES Receive DSMs: YES IDA in DSM if only one KD can be shared: YES Role assumed: EITHER A OR B Automatic error recovery: TESTED</td>
<td>Software: Version 2.0</td>
<td>May 15, 1991</td>
<td></td>
</tr>
<tr>
<td>Concord, Massachusetts 01742 John Gill, (617) 662-6036</td>
<td></td>
<td></td>
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<td>2. TECHNICAL COMMUNICATIONS CORPORATION</td>
<td>Hardware: CX5000A</td>
<td>No. of communicating pairs: 1 No. of manual (*KKs) per comm. pair: 1 Length of manual and auto. (*KKs): PAIR Key generation capability: YES Number of auto, distr. (*KKs) shared: 0 Number of KDS shared: 1 2 KDS in KSMs: NEVER Send RSI messages: NOT TESTED Receive RSI messages: NOT TESTED Notarization of keys in KSMs: ALWAYS Send odd parity on keys in KSMs: ALWAYS Send IVs in KSMs: SOMETIMES Send encrypted IVs in KSMs: ALWAYS Send EDCs in RSIs and ESMs: ALWAYS Action if EDC received in RSIs and ESMs: NOT APPLICABLE Send EDKs in KSMs: NEVER Action on count error: ADJUST COUNT Send DSMs: YES Receive DSMs: YES IDA in DSM if only one KD can be shared: YES Role assumed: EITHER A OR B Automatic error recovery: NOT TESTED Space &amp; CRLF as field delimiter: NOT TESTED</td>
<td>Software: Version 1.0</td>
<td>May 6, 1991</td>
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<tr>
<td>100 Domino Drive Concord, Massachusetts 01742 John Gill, (617) 662-6036</td>
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<td>4. COMMUNICATION DEVICES, INC.</td>
<td>Hardware: RSD/E</td>
<td>No. of communicating pairs: 1 No. of manual (*KKs) per comm. pair: 1 Length of manual and auto. (*KKs): PAIR Key generation capability: NO Number of auto, distr. (*KKs) shared: 0 Number of KDS shared: 1 2 KDS in KSMs: NEVER Send RSI messages: NOT TESTED Receive RSI messages: TESTED Notarization of keys in KSMs: ALWAYS Send odd parity on keys in KSMs: ALWAYS Send IVs in KSMs: SOMETIMES Send encrypted IVs in KSMs: ALWAYS Send EDCs in RSIs and ESMs: ALWAYS Action if EDC received in RSIs and ESMs: NOT APPLICABLE Send EDKs in KSMs: NEVER Action on count error: ADJUST COUNT Send DSMs: YES Receive DSMs: YES IDA in DSM if only one KD can be shared: YES Role assumed: EITHER A OR B Automatic error recovery: TESTED Space &amp; CRLF as field delimiter: NOT TESTED</td>
<td>Software: Version 7.0</td>
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<tr>
<td>1 Forstillman Court Clifton, NJ 07011 Gene Hartsell, (201) 772-6997</td>
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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.


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

1. OSI Abstract Test Suites (ATS).
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
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.

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<td>FIPS PUB 21-3</td>
<td>Judy Kailey NIST, Bldg. 225, Rm. A266 Gaithersburg, MD 20899 (301) 975-3259</td>
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<td>Fortran</td>
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<td>Pascal</td>
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<td>VHDL</td>
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<td>GKS</td>
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