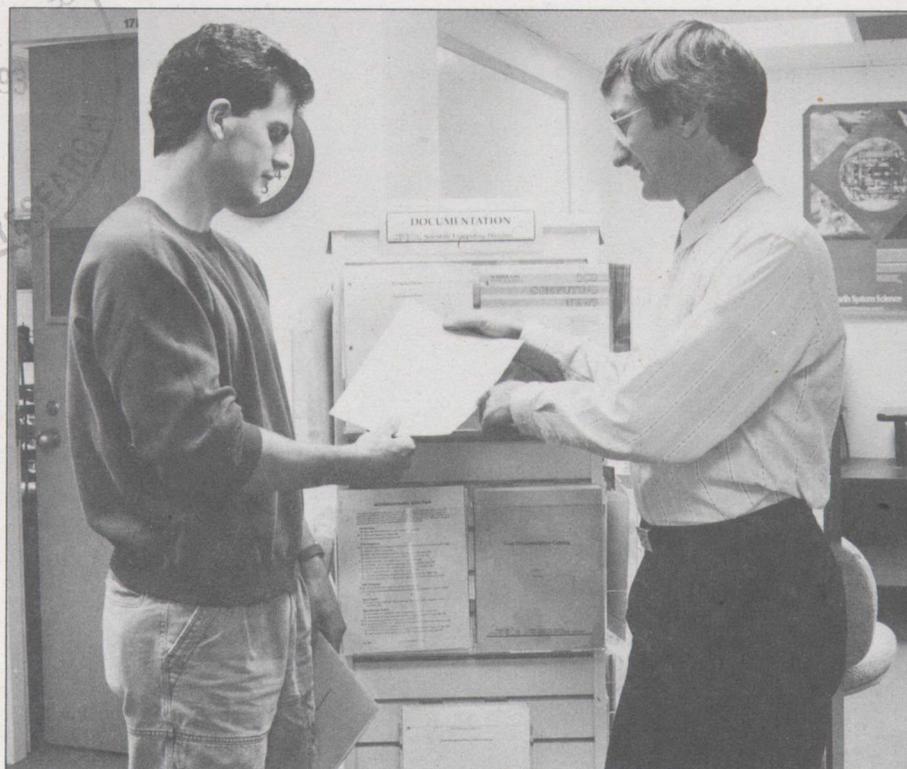


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NEWS



Special Issue: **USER DOCUMENTATION
CATALOG**



SCIENTIFIC COMPUTING DIVISION
NATIONAL CENTER FOR ATMOSPHERIC RESEARCH

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About the cover

Documentation for users of NCAR computing resources is available in both SCD consulting offices: Room 17 of the Mesa Lab and Room 2125, Building 3, of the Foothills Lab. In the cover photo, Brian Bevirt (right), a writer/editor in the SCD User Services Documentation Group, discusses reference materials with a user. (Photo by Ginger Hein.)

Conventions used in this catalog

Bold represents command names, options, filenames, pathnames, directories, and other items that must be typed as shown.

Bold italics represent variables where you provide the substitution (such as *filename*).

Courier is used for Fortran programs, shell scripts, and screen displays.



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Contents

Overview of this catalog	1
Hardcopy documentation.....	1
Ordering information.....	1
Reference copies.....	2
Online documentation.....	2
Questions?.....	2
Hardcopy documentation	3
Applications software.....	5
Data formats (HDF/netCDF).....	5
Math libraries.....	5
Miscellaneous applications.....	11
Cray computers.....	12
Documentation distributed by SCD.....	12
UNICOS documentation distributed by Cray.....	12
To order Cray documentation.....	17
Graphics.....	18
To order NCAR Graphics documentation.....	20
Introduction to the SCD computing environment.....	21
Mass Storage System.....	24
Networking and data communications.....	25
Output services (Text and Graphics System—TAGS).....	29
UNIX.....	31
Additional topics.....	32
Online documentation	33
SCD Daily Bulletin.....	35
Interactive access.....	35
IRJE access.....	35
MIGS access.....	35
FTP access.....	36
SCD computational servers.....	37
CRAY Y-MP8/864 (shavano).....	37
Man pages.....	37
The UNICOS news command.....	40
The hints command.....	41
Example NQS script files on shavano.....	43
Docview.....	43
UNIX front-end computer (meeker).....	45
Man pages.....	45

Anonymous FTP.....	49
Documentation available via anonymous FTP.....	49
How to use anonymous FTP.....	53
Distributed Software Libraries (DSL/XmDSL).....	55
How to access DSL.....	55
How to access XmDSL.....	56
FTP access of DSL libraries.....	57
For more information.....	58
Gopher.....	59
How to access Gopher.....	59
Archie.....	60
How to access Archie by Telnet.....	60
SCD documentation order form.....	62
Documentation checklist.....	62
How to order documentation.....	66
By mail.....	66
By phone.....	67
By e-mail.....	67

OVERVIEW OF THIS CATALOG

The *SCD User Documentation Catalog* is available both in hardcopy and online. It is available online via anonymous File Transfer Protocol (FTP) from the computer named ftp.ucar.edu under the pathname **docs/catalog/userdoc.catalog**. (See the "Anonymous FTP" section in this catalog for FTP access instructions.)

This catalog is organized into two main parts: hardcopy documentation and online documentation.

Hardcopy documentation

The first half of this catalog describes hardcopy documentation distributed by SCD to NCAR computer users. It also recommends documentation you may want to order directly from vendors.

The hardcopy documentation is grouped into the following categories:

- Applications software
- Cray computers
- Graphics
- Introduction to the SCD computing environment
- Mass Storage System
- Networking and data communications
- Output services (Text and Graphics System—TAGS)
- UNIX
- Additional topics

Within each category is a brief description of each document, including (if available) the publication and version number, publication date, number of pages, and price of vendor documentation.

Ordering information

For ordering information, see the "SCD documentation order form" at the end of this catalog.

Reference copies

Reference copies of the hardcopy documentation described in this catalog are also available in the SCD consulting offices (Room 17 in the Mesa Lab and Room 2125, Building 3 of the Foothills Lab).

Online documentation

The second half of this catalog describes online documentation available to NCAR computer users. Online documentation is grouped into the following categories:

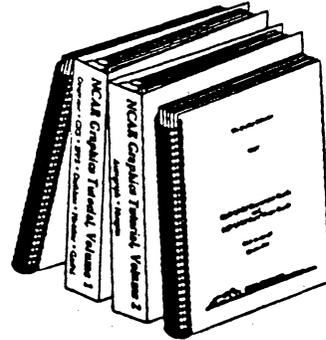
- SCD Daily Bulletin
- SCD computational servers
- Anonymous FTP
- Distributed Software Libraries (DSL/XmDSL)
- Gopher
- Archie

Each section gives a brief description of how to access and obtain the information online.

Questions?

If you have questions about the documentation listed in this catalog, please contact an SCD consultant on duty by sending e-mail to consult1@ncar.ucar.edu or calling (303) 497-1278.

HARDCOPY DOCUMENTATION



Applications software

In this section, SCD and vendor documents are grouped together. If the document is available from SCD, no address is listed; if it is available from a vendor, the ordering information follows the entry. Reference copies of these documents are also available for use in the SCD consulting offices (Mesa Lab, Room 17, or Foothills Lab, Room 2125, Building 3).

Data formats (HDF/netCDF)

NCSA HDF Calling Interfaces and Utilities,
Version 3.1, July 1990, 165 pages

Contains all the details of using the Hierarchical Data Format (HDF). HDF is a multi-object file format for the transfer of graphical and floating-point data between machines. This manual includes information on storing raster images, palettes, and rectangular gridded arrays of scientific data. HDF was developed by the National Center for Supercomputing Applications (NCSA) and is available on the CRAY Y-MP8/864 (shavano).

**The netCDF User's Guide:
An Interface for Data Access,**
*Version 2.0, October 1991,
150 pages*

Describes the files, data, and use of the Network Common Data Form (netCDF). NetCDF is an interface to a library of data access programs for storing and retrieving scientific data. In netCDF files, data are represented in a machine-independent form, making it possible to access the data from any workstation on which the netCDF library is installed. NetCDF was developed by Unidata and is available on the CRAY Y-MP8/864 (shavano).

Math libraries

Various forms of math library documentation are available, both in hardcopy or online via the Distributed Software Libraries (DSL) utility and anonymous File Transfer Protocol (FTP). (For more information on DSL and FTP, see the "Distributed Software Libraries" and "Anonymous FTP" sections of this catalog.)

The following reference chart (see Table 1) lists math libraries by functionality and shows where to find the appropriate documentation.

Table 1. Math library reference chart

Functionality	Library	Computers	Documentation
Associated Legendre functions	ALFPACK	Portable	DSL
Curve and surface fitting, interpolation	FITPACK	Portable	UserDoc, DSL
Eigensystem solvers	CMSSL SCI	CM-5 Cray	Vendor manual Vendor manual
Fast Fourier transforms	CMSSL ECMFFT FFTPACK GPFA SCI	CM-5 Cray Cray Cray Cray	Vendor manual UserDoc, DSL DSL DSL Vendor manual
General math	CMSSL ESSL IMSL NAG NCARM Mathematica	CM-5 RS/6000 cluster Cray Cray Cray RS/6000 cluster (chief only)	Vendor manual Vendor manual Vendor manual, DSL Vendor manual, DSL DSL UserDoc
General statistics	IMSL NAG STARPAC	Cray Cray Portable	Vendor manual, DSL Vendor manual, DSL DSL, UserDoc
Linear equation solvers	CMSSL LAPACK SCI	CM-5 Portable Cray	Vendor manual Vendor manual Vendor manual
Nonlinear equation solvers	MINPACK	Portable	DSL
Ordinary differential equation solvers	ODEPACK	Portable	UserDoc, DSL
Separable elliptic partial differential equation solvers	CRAYFISHPAK FISHPAK MUDPACK	Cray Portable Cray	Vendor manual, DSL UserDoc, DSL NCAR technical note, DSL
Special functions	AMOSLIB FUNPACK IMSL	Cray Cray Cray	DSL DSL Vendor manual, DSL
Spherical harmonic analysis	SPHEREPACK	Portable	DSL

Note: The "Computers" column in Table 1 indicates the placement of the library on SCD computers. "Cray" may refer to one or more Cray supercomputers at NCAR; for the latest information on where a library is installed, or other questions on math library documentation, send e-mail to valent@ncar.ucar.edu.

The following is a list of math library documentation available in hardcopy from SCD and vendors.

Connection Machine Scientific Software Library, CMD-SSL2-F
Version 3.0, December 1992,
500 pages, \$40

Describes the Connection Machine Scientific Software Library (CMSSL) language interface from Connection Machine (CM) Fortran. To order this two-volume reference manual, call (617) 234-2706 or write:

Thinking Machines Corporation
Attn: Documentation Order
245 First Street
Cambridge, MA 02142-1264

CRAYFISHPAK User Manual,
Version 1.1, 1992, 104 pages, \$20

Includes descriptions of the 16 user-callable drivers that solve Helmholtz's equation in two- and three-dimensional coordinate systems. To order a copy of the manual, call (303) 447-9224 or write:

Dr. Roland Sweet
Green Mountain Software
1951 Alpine Avenue
Boulder, CO 80304-3657

Distributed Software Libraries,
Version 1.3, February 1993,
20 pages

Describes how to use the Distributed Software Libraries (DSL) utility to access most of NCAR's public domain software libraries, search for subprograms to solve your mathematical problems, and return the appropriate software or documentation to your home computer anywhere on the Internet. This document gives instructions for accessing and using DSL; it includes examples and a list of available commands. New to this version of the document is a section that explains how to access XmDSL, the new DSL utility for the X Window System.

**ECMFFT: Half-Complex
Multiple Fast Fourier
Transform Routines,**
*Draft Version 1.0, June 1991,
10 pages*

Describes how to use the real transform routines in NCAR's ECMFFT library and how to obtain the source code for the nonproprietary version of these routines. The document includes examples of simple working programs. ECMFFT is a binary library of half-complex fast Fourier transforms (FFTs) optimized for the Cray computers; it was provided by the European Centre for Medium Range Weather Forecasts (ECMWF).

**FISHPAK: A Package of Fortran
Subprograms for the Solution
of Separable Elliptic Partial
Differential Equations,**
Version 2.0, March 1990, 8 pages

Describes FISHPAK, a software library intended for users who are solving separable elliptic partial differential equations by direct methods. Several of the Fortran subroutines treat the Helmholtz equation in Cartesian, polar, cylindrical, and spherical coordinate systems. This document is also available via anonymous File Transfer Protocol (FTP) from ftp.ucar.edu under the pathname **docs/software/fishpak**.

Also available online via
anonymous FTP

**FITPACK: A Software
Package for Curve and Surface
Fitting Employing Splines
Under Tension,**
*Version 1.0, September 1987,
22 pages*

Provides an overview of the FITPACK library; contains descriptions of the main user-callable entries, but does not include argument descriptions. (For argument descriptions, see the online FITPACK directory using the Distributed Software Libraries [DSL] utility; for DSL access information, see the "Distributed Software Libraries" section in this catalog.)

**Getting Started with
Mathematica on SCD's
IBM RS/6000 Platform,**
*Version 1.0, October 1992,
15 pages*

Describes hardware and login requirements and tells how to set environmental variables for Mathematica, an advanced mathematical and symbolic computational software package. This UserDoc explains Mathematica conventions such as input and output prompts, built-in objects and arguments, and output representations. A sample Mathematica session is included, as well as sections on hardcopy output, importing PostScript into FrameMaker, and troubleshooting.

IBM Engineering and Scientific Subroutine Library Guide and Reference, SC23-0526, Version 2, April 1992, 1,343 pages, \$78.75

Contains information on designing applications programs using IBM's Engineering and Scientific Subroutine Library (ESSL). The guide includes an overview of ESSL as well as information for designing, coding, and running programs; migrating existing programs; and diagnosing problems. The guide also contains reference information for coding each ESSL calling sequence. This documentation is intended for a wide class of users. To order, call (800) 879-2755.

IMSL User's Manual: Fortran Routines for Mathematical Applications and Statistical Analysis, Version 2.0, September 1991

*Softcover set, \$75
3-ring binder set, \$210*

Contains chapter overviews and descriptions of the mathematical and statistical routines offered in the International Mathematical and Statistical Library (IMSL). To order the IMSL manual set, call (713) 242-6776 or write:

Visual Numerics, Inc.
Customer Relations
9990 Richmond, Suite 4000
Houston, TX 77042

LAPACK Users' Guide, 1992, \$19.50, 250 pages

Describes a library of Fortran 77 subroutines for solving systems of linear equations, linear least squares problems, eigenvalue problems, and singular value problems. LAPACK can also handle many associated computations such as matrix factorizations or estimating condition numbers. To order the guide, call the Society for Industrial and Applied Mathematics (SIAM) at (800) 447-7426 or write:

SIAM
Customer Services
3600 University City Science Center
Philadelphia, PA 19104-2688

**MUDPACK: Multigrid Software
for Linear Elliptic Partial
Differential Equations,**
*Version 3.0, March 1991,
53 pages*

Introduces, describes, and provides examples of the use of the Cray vectorized software package MUDPACK, which was developed at NCAR. MUDPACK is a collection of portable Fortran subroutines that utilize multigrid iteration to efficiently approximate the solution to a variety of two- and three-dimensional elliptic partial differential equations. Improvements since earlier versions include additional grid size flexibility, multigrid options, fourth-order solvers, hybrid multigrid-direct method solvers, subroutines to compute fine-grid residuals, solvers in relocatable binary form, and improved documentation.

**NAG Fortran Library
Manual, Mark 15,**
May 1992, 10 volumes, \$400

Contains chapter overviews and detailed routine usage of the mathematical and statistical routines offered in the Numerical Algorithms Group (NAG) Fortran Library. To order this manual set, call (708) 971-2337 or write:

NAG, Inc.
1400 Opus Place, Suite 200
Downers Grove, IL 60515

Note: NAG offers two other less expensive manuals that summarize the functionality of the 10-volume set: *NAG Fortran Library Concise Reference, Mark 15* (\$55), and *NAG Fortran Library Introductory Guide, Mark 15* (\$30). These manuals are also available from the above address.

ODEPACK Reprints,
*Version 1.0, March 1989,
18 pages*

Contains two papers about ODEPACK by Dr. Alan C. Hindmarsh. ODEPACK is a collection of Fortran subprograms that solves the initial value problem for ordinary differential equation (ODE) systems.

UNICOS Math and Scientific Library Reference Manual, Volume 3, SR-2081, \$67.70

(includes documentation for the SCI library)

Describes the math and scientific library routines available on all Cray Research systems running under UNICOS. To order a copy of the manual, call (612) 683-5907 or write:

Order Desk
Cray Research, Inc.
2360 Pilot Knob Rd.
Mendota Heights, MN 55120

User's Guide to STARPAC: The Standard Time Series and Regression Package, STARPAC Version 2.07, October 1987, 300 pages

Explains how to use STARPAC, a library of Fortran subroutines for statistical data analysis developed by the Statistical Engineering Division of the National Institute for Standards and Technology, Boulder, Colorado.

Miscellaneous applications

GBYTES and SBYTES, Version 1.1, September 1988, 7 pages

Describes how to use the GBYTE, GBYTES, SBYTE, and SBYTES utilities. These utilities allow you to unpack or pack selected data from a record, independent of what computer formatted the data and what computer is reading it. Graphics have been incorporated to clearly demonstrate the bit manipulation.

IFTRAN Preprocessor, Draft Version 2.0, April 1989, 27 pages

Offers guidance in using the IFTRAN preprocessor at NCAR. IFTRAN is Fortran-based, highly portable, and easier to write and read than basic Fortran. The document includes IFTRAN commands, statement and input formats, and information about using IFTRAN on several mainframe computers.

Cray computers

Documentation distributed by SCD

**Hints for Using shavano
Efficiently and Reducing
Your Charges,**
*Version 1.0, August 1992,
19 pages*

Contains information on how you can decrease the turnaround time for your CRAY Y-MP8/864 (shavano) jobs and reduce General Accounting Unit (GAU) charges. This collection of articles from *SCD Computing News* shows how to build checkpointing capabilities into your jobs, set Network Queueing System (NQS) limits, optimize your input/output (I/O), and drop unneeded jobs before they run.

**IPT User's Manual,
FORTRAN-lint™ Source Code
Analyzer for UNIX-Based
Operating System: Reprint,**
*Version 2.90, March 1993,
44 pages*

Describes FORTRAN-lint, a programming tool developed by Information Processing Techniques that analyzes source code and detects a wide range of potential problems. FORTRAN-lint (which is invoked by the **flint** command) is especially useful for finding errors between routines, such as incorrect arguments and common block problems. SCD encourages the use of **flint** on all Fortran programs.

UNICOS documentation distributed by Cray

The following is a list of Cray Research documentation commonly referred to by users of the CRAY Y-MP8/864 (shavano) and the CRAY Y-MP2D (castle) computers at NCAR. Many more manuals and technical notes are available from Cray Research, and a complete list is printed in *Cray's User Publications Catalog*, CP-0099. Check with Cray Research for the latest prices, titles, and revision numbers, which are subject to change. Ordering instructions for all Cray documents appear at the end of this section.

Note: At the time of this printing, UNICOS 6 was running on shavano and castle. SCD expects to upgrade to UNICOS 7 on shavano in late summer 1993. We recommend that before ordering documentation, you check to see which version of UNICOS is running on the computer you plan to use; specify that version to Cray Research when you order.

Advanced I/O User's Guide,
SG-3076, \$30.20

Covers such topics as system input/output (I/O) and flexible file I/O (FIFO). This is the second volume in a two-volume set on I/O optimization. These manuals describe the types of I/O available and when to use different types. (See the *I/O User's Guide* in this section for a description of the first volume.)

**CF77 Compiling System
Ready Reference,**
SQ-3070, \$8.60

Summarizes CF77 commands and syntax in reference booklet form.

**CF77 Compiling System,
Volume 1: Fortran
Reference Manual,**
SR-3071, \$46.20

Describes the use of the CF77 compiling system. This manual includes information on invocation commands, options, and directives.

**CF77 Compiling System,
Volume 2: Compiler
Message Manual,**
SR-3072, \$19.80

Lists all messages issued by the compiling phase of the CF77 compiling system. Each message is accompanied with an expanded description of the problem and suggested solution.

**CF77 Compiling
System, Volume 3:
Vectorization Guide,**
SG-3073, \$21.20

Describes the basis and usage of CF77's vectorization capability. Vectorization is the processing of array elements in tightly sequenced groups. The manual includes descriptions of data dependency issues, loop types, vectorization hardware, and memory use, as well as extensive examples.

**CF77 Compiling System,
Volume 4: Parallel
Processing Guide,**
SG-3074, \$42.05

Defines and describes the Autotasking feature of the CF77 compiling system.

**Cray Standard C Programmer's
Reference Manual,**
SR-2074, \$51.40

Describes Cray Standard C features and summarizes Cray-specific details of the American National Standards Institute (ANSI) standard C language.

Docview User's Guide,
SG-2109, \$16.85

Describes the Docview program, which provides online access to Cray Research documents as well as locally written documents.

I/O User's Guide
SG-3075, \$31.40

Covers such topics as standard Fortran input/output (I/O), Fortran I/O extensions, the **assign** command, optimization, and tools for extracting program statistics. This is the first volume in a two-volume set on I/O optimization. These manuals describe the types of I/O available and when to use different types. (See the *Advanced I/O User's Guide* in this section for a description of the second volume.)

Network Queueing System (NQS) User's Guide,
SG-2105, \$32.05

Describes the use of the Network Queueing System (NQS), which is part of UNICOS. The manual was written for end users who want to create, submit, monitor, or control NQS jobs.

Segment Loader (SEGLDR) and ld Reference Manual,
SR-0066, \$23.95

Describes the operation of the Cray loader that loads both segmented and nonsegmented programs.

UNICOS CDBX Debugger User's Guide,
SG-2094, \$12.95

Describes the characteristics and capabilities of the CDBX debugger.

UNICOS CDBX Symbolic Debugger Reference Manual,
SR-2091, \$33.30

Describes the functions and operating of the Cray symbolic debugger, CDBX.

UNICOS Environment Variables Ready Reference,
SQ-2117, \$5.05

Provides a quick reference to for UNICOS users who want to customize their environments by using the C shell, Bourne shell, or Korn shell. The contents include environment commands, environment variables in Fortran and C, UNICOS environment variables, and dot files.

**UNICOS File Formats and
Special Files Reference Manual,**
SR-2014, \$56.95

Provides information on UNICOS file formats and special files available on UNICOS systems. This is a reference manual for programmers and system administrators.

UNICOS Index for Man Pages,
SR-2049, \$65.50

Provides global indexes for the UNICOS online manual set.

**UNICOS Korn Shell
Reference Card,**
SQ-2115, \$2.20

Describes the Korn shell built-in commands, shell functions, variable substitutions, and flow of control. This reference card includes a listing of all environment variables used and set by the Korn shell. For complete information, users should refer to the *UNICOS User Commands Reference Manual*, publication SR-2011, and to other manuals in the UNICOS documentation set.

**UNICOS Library Reference
Manuals, Volumes 1-4:**

**Volume 1:
UNICOS Fortran Library
Reference Manual,**
SR-2079, \$57.95

Describes Fortran subprograms and functions (other than math and scientific routines) available under UNICOS.

**Volume 2:
UNICOS Standard C Library
Reference Manual,**
SR-2080, \$71.20

Describes the UNICOS C library functions.

**Volume 3:
UNICOS Math and Scientific
Library Reference Manual,**
SR-2081, \$67.70

Describes the math and scientific library routines available on all Cray Research systems running under UNICOS.

**Volume 4:
UNICOS System Calls
Reference Manual,**
SR-2012, \$42.95

Describes UNICOS system calls available on all Cray Research computer systems running under UNICOS.

UNICOS Message Reference Manual,
SR-2200, \$57.95

Lists error messages and corresponding documentation for portions of the UNICOS operating system and for several products that run under UNICOS.

UNICOS Performance Utilities Reference Manual,
SR-2040, \$78.50

Describes various utilities for analyzing the performance of your program, including **ftref**, **flowtrace**, **hpm**, **prof** **perftrace**, and **procstat**.

UNICOS 7.0 Release Overview,
RO-5000 7.0, \$41.65

Also available online via anonymous FTP

Provides an overview of the UNICOS operating system 7.0 release. An online version is also available via anonymous File Transfer Protocol (FTP) from <ftp.ucar.edu> under the pathname **docs/cray/unicos7/7.0_release_overview**.

UNICOS Shell and Variable Ready Reference,
SQ-2060, \$7.60

Provides a quick reference to the shell and to writing shell scripts (both Bourne and C shell).

UNICOS Shell Ready Reference,
SQ-2116, \$5.20

Provides a quick reference to for UNICOS users who want to customize their environments by using the C shell, Bourne shell, or Korn shell. The contents include identifying and changing shells and shell scripts, shell commands, and a UNICOS signal table.

UNICOS Source Code Control System (SCCS) User's Guide,
SG-2017, \$10.90

Describes the Source Code Control System (SCCS), a collection of programs that track modifications to files.

UNICOS Support Tools Guide,
SG-2016, \$28.85

Covers commands such as **make** and **awk**.

UNICOS User Commands Ready Reference,
SQ-2056, \$18.35

Summarizes the syntax and options of UNICOS user commands; this is a very useful pocket-sized booklet.

**UNICOS User Commands
Reference Manual,**
SR-2011, \$106.30

Describes UNICOS commands that are invoked directly by users or by command language procedures (shell script). This two-volume manual is for system users. Readers should be familiar with UNICOS or UNIX.

UNICOS vi Reference Card,
SQ-2054, \$1.00

Summarizes commonly used **vi** commands in a pocket-sized reference card.

**UNICOS X Window System
Reference Manual,**
SR-2101, \$13.50

Provides information on the X Window System.

UPDATE Reference Manual,
SR-0013, \$22.50

Describes UPDATE, a Cray Research program that provides programmers with tools for modifying, editing, and updating source language programs on UNICOS.

To order Cray documentation

To order Cray documentation or a copy of their complete *User Publications Catalog*, call (612) 683-5907 or write:

Order Desk
Cray Research, Inc.
2360 Pilot Knob Rd.
Mendota Heights, MN 55120

If you order documentation by phone, please state that you are affiliated with NCAR and provide a billing and a shipping address.

**GFLASH—
A Graphics Instruction
Manipulation Package,**
Version 1.0, March 1989, 9 pages
(\$2 for users without an SCD
login account)

Discusses a package of Fortran subroutines that provide a limited picture segmentation capability. GFLASH captures a set of graphics instructions in a dataset and can be used to insert these instructions into any subsequent picture, making it unnecessary to regenerate the instructions. One use of this capability is in making movies. GFLASH routines (with one exception) can be used with any Graphical Kernel System (GKS) package that is level 2A or higher.

**A Guide to the Production
of Computer-Generated
Films at NCAR,**
*Version 3.0, January 1991,
20 pages*

Gives information on making movies at NCAR, with special emphasis on using NCAR Graphics. The document gives planning advice that includes defining content, time intervals, and running time; it also provides tips on producing the film script and credits. It includes information on how to access the Text and Graphics System (TAGS) and shows how to test, produce, and edit your movies. The document also contains guidelines for the effective use of color.

**A Guide to the Production of
Computer-Generated Video
Animations Using TAGS,**
*Version 1.0, December 1992,
46 pages*

Provides instructions and helpful hints for users who want to record an animation onto videotape using Text and Graphics System (TAGS). Included are examples of how to send local and remote files to TAGS via NCAR's Mainframe and Server Network (MASnet) and the MASnet/Internet Gateway Server (MIGS), as well as how to select the video format, frame rate, and number of "loops" for a video animation.

The document also has a section on ways to create optimal images for videotape presentation and a section explaining various video-editing techniques. Appendixes contain information on video-specific TAGS keywords, supported image formats, image resolution on videotape, and using the Ximage tool from the National Center for Supercomputing Applications (NCSA).

Interactive Modification of NCAR Graphics Plots via Macintosh Applications,
Version 1.0, November 1990,
11 pages

(\$2 for users without an SCD login account)

Reviews and compares four commercial products that convert NCAR Graphics Computer Graphics Metafile (CGM) format to PICT format. Once an NCAR Graphics plot is converted to PICT format, it can be interactively edited using Macintosh tools such as Canvas and Freehand. The resulting plot can then be incorporated in other Macintosh applications, such as Microsoft Word and PageMaker.

NCAR Computer Graphics Metafile Format Reference Guide,
Version 1.0, April 1990, 5 pages

Describes the NCAR implementation of the Computer Graphics Metafile (CGM) standard. The NCAR CGM is a private encoding of the binary encoding described in the CGM standard defined by the American National Standards Institute (ANSI) and the International Standards Organization (ISO). This reference guide briefly describes record formats and NCAR data types, then provides a list of the CGM standard elements that can be both generated by the NCAR Graphical Kernel System (GKS) package and interpreted by the NCAR CGM translator.

NCAR Graphics Contouring and Mapping Tutorial,
Version 2.0, May 1993, 440 pages

(For pricing information on this manual, call 303-497-1201)

Provides a step-by-step guide to the important functionality of the geographic mapping and contouring utilities. It also covers the Areas utility, an area-processing utility that allows you to fill regions, draw masked lines, and perform other useful functions. The tutorial requires basic Fortran skills and knowledge of how to generate and view graphics. Information about generating and viewing graphics appears in *NCAR Graphics Fundamentals, UNIX Version* (see below).

NCAR Graphics Fundamentals, UNIX Version,
Version 1.0, May 1993, 509 pages

(For pricing information on this manual, call 303-497-1201)

Includes information on the philosophy of NCAR Graphics; the structure of NCAR Graphics programs; strategies for learning NCAR Graphics; instructions for compiling, linking, and running programs; instructions for producing and editing output from NCAR Graphics programs; and guidelines for using the utilities. This introductory user guide is designed to get you up and running with NCAR Graphics as fast as possible.

**User's Guide for
NCAR GKS-0A Graphics,**
Version 3.0, April 1993,
124 pages

(\$15 charge to users without an
SCD login account)

Describes the Fortran subroutines for a subset of the NCAR Graphical Kernel System (GKS)-0A routines that are most commonly used in conjunction with the NCAR Graphics package. Functions discussed include opening and closing GKS, setting coordinate systems, designating types of graphic and text output, and selecting color representations. Some NCAR Graphics calls that provide additional functions not found in GKS are also discussed, as well as numerous examples and hints for avoiding common pitfalls.

To order NCAR Graphics documentation

For information about ordering NCAR Graphics documentation and software, send e-mail to scdinfo@ncar.ucar.edu, call (303) 497-1201, or write:

NCAR
SCD/Graphics Distribution
P.O. Box 3000
Boulder, CO 80307-3000

Introduction to the SCD computing environment

SCD recommends the following documentation for users new to the SCD computing environment.

**Acronyms and Terms
Frequently Used in the SCD
Computing Environment,**
Version 1.0, November 1988,
12 pages

Also available online via
anonymous FTP

Contains acronyms and terms that are often used in the SCD computing environment. An appendix discusses abbreviations for commonly used computing units. This document is also available via anonymous File Transfer Protocol (FTP) from ftp.ucar.edu under the pathname **docs/other/acronyms**.

**Charges for SCD
Computing Resources,**
Version 7.3, January 1993,
22 pages

Also available online via
anonymous FTP

Includes the large model subqueues. The document provides the formulas to compute General Accounting Unit (GAU) charges for using the computing resources in SCD. It contains the charging formulas for the CRAY Y-MP8/864 computer (shavano), the Mass Storage System (MSS), the Text and Graphics System (TAGS), and Xerox 4050 laser printer output. This document is also available via anonymous File Transfer Protocol (FTP) from ftp.ucar.edu under the pathname **docs/other/charges.gau**.

NCAR UNICOS Primer,
Version 2.0, October 1990,
448 pages

A *Primer* update is also
available online via
anonymous FTP

Introduces the UNICOS computing environment at NCAR and provides sufficient information, examples, and practice for most new users to become comfortable with UNICOS. Each chapter begins with a synopsis of commands introduced in that chapter, continues with a one- or two-page discussion of key concepts, and concludes with a step-by-step practice session designed to exercise the user's new skills. This tutorial manual helps new users grasp the basic principles of UNIX and UNICOS, the **vi** screen editor, UNICOS shells, and UNICOS tools. It also provides recommendations for using the UNICOS system as well as instructions for running jobs, viewing job output, processing graphics metafiles, and using software libraries.

A new manual is being written that will replace the *NCAR UNICOS Primer*; its expected release date is summer 1993. If you order the *Primer* after release of the new manual, you will automatically receive the new manual in place of the *Primer*.

In the interim before release of the new manual, an update document ("Update for the NCAR UNICOS Primer," Version 1.1, April 1992) has been appended to the *Primer*. This update document is also available via anonymous File Transfer Protocol (FTP) from [ftp.ucar.edu](ftp://ftp.ucar.edu) under the pathname **docs/intro/primer.update**.

Supercomputing: The View from NCAR (FY92 Review and FY93-94 Development Plan for the NCAR Scientific Computing Division),
January 1993, 193 pages

Provides a description of recent activities in SCD and describes its plans for fiscal years FY93 and FY94. This document is intended for SCD users and staff, University Corporation for Atmospheric Research (UCAR)/NCAR management, and key people in governmental agencies.

The plan highlights recent accomplishments and covers SCD research and development in the areas of networking and data communications, computational servers, distributed services, mass storage services, scientific visualization, data support, computational support, operations and plant engineering, user services, and the Model Evaluation Consortium for Climate Assessment (MECCA) project.

Mass Storage System

Importing and Exporting Data between the Mass Storage System and Tape via MIGS,
Version 1.1, February 1992,
29 pages

Gives detailed information on file transfer between the Mass Storage System (MSS) and tape media, including 1/2-inch magnetic tape, IBM 3480 tape cartridge, and 8-mm videotape cassettes (EXAbyte type). The document demonstrates use of the MASnet/Internet Gateway Server (MIGS) **nrnet** command, along with the **msimport** and **msexport** verbs, describes all applicable keywords, and gives examples of their use. This version describes parameters for receiving job status information, changing project or user numbers, and using high-density EXAbyte tapes.

Introduction to NCAR's Mass Storage System,
Version 1.1, December 1992,
40 pages

Provides an introduction to the Mass Storage System (MSS), a combination of hardware and software that stores large numbers of user files. By using the MSS commands covered in this document, you can transfer files to and from the MSS, obtain MSS file listings, change MSS file attributes, and transport data to and from tape media. The MSS file purge policy, the file protection system, and file-naming conventions are described.

Reading, Converting, and Writing MSS Files on UNICOS,
Version 1.1, August 1992,
20 pages

Describes how to use Mass Storage System (MSS) files on the CRAY Y-MP8/864 (shavano) and the CRAY Y-MP2D (castle). This version includes the **msread/mswrite** interface and reflects the latest version of UNICOS. The document explains how to determine the structure, format, and data type of an MSS file and how to read it properly from the MSS. It also describes various methods you can use to convert a file to the appropriate UNICOS format for processing on shavano, and explains different **assign** options you can use to read a file into a Fortran program.

Networking and data communications

Asynchronous Communications Packages for PC Users,
Version 1.0, May 1989, 4 pages

Discusses SCD-supported data communications packages for personal computer (PC) users who use asynchronous communications to access NCAR computing facilities.

The Elm Reference Guide: Reprint,
Version 2.2, April 1992, 28 pages

Provides a comprehensive explanation of all commands and options to the Elm mail system. This document describes the `.elm/elmrc` file, command-line options, outgoing mail processing, responses of various commands, mail archive folders, the alias system, and Elm utilities. The document also includes a section for expert mail users.

The Elm Users Guide: Reprint,
Version 2.2, April 1992, 12 pages

Provides an introduction to e-mail using the Elm mail system. This document includes a tutorial session, a discussion of noninteractive uses of Elm, and a brief description of Elm utilities.

Glossary of Networking Terms and Acronyms,
Version 1.0, August 1989, 16 pages

Also available online via anonymous FTP

Provides informal definitions and other useful information about networking terms and acronyms that are common in the NCAR computing environment. This document is also available via anonymous File Transfer Protocol (FTP) from `ftp.ucar.edu` under the pathname `docs/networking/network.terms`.

IRJE Quick Reference,
Version 3.0, June 1992

Summarizes Internet Remote Job Entry (IRJE) command files and parameter files in reference-card format.

IRJE: Using the NCAR Internet Remote Job Entry System,
Version 5.2, June 1992, 53 pages

Also available online via anonymous FTP

Explains how university users can use Internet Remote Job Entry (IRJE) to submit jobs directly from their local host computers to the Cray computers, the Mass Storage System (MSS), the Text and Graphics System (TAGS), and the high-speed laser printer at NCAR. With this release, the interactive IRJE database replaces the **.ntwkparms** file as the means for users to update their registration information. Also, IRJE will now pass on to TAGS any parameters and values that are valid for TAGS, including values and parameters that are created as new output devices become available. The document includes information on how to specify an MSS read password for requests to TAGS to process a file that is on the MSS. It also includes the "IRJE Quick Reference."

This document is also available via anonymous File Transfer Protocol (FTP) from [ftp.ucar.edu](ftp://ftp.ucar.edu) under the pathname **docs/networking/irje**.

MICROCOM AX/9624c User Documentation,
Version 1.0, March 1989, 3 pages

Provides instructions for connecting to the 9600 baud per second (bps) modems that are installed on rotary phone lines at NCAR and explains the correct switch configurations and software settings necessary for communications. The document also includes purchasing information for NCAR-compatible 9600 bps modems.

MIGS: MASnet/Internet Gateway Server Reference Manual,
Version 3.0, April 1992, 80 pages

Describes the MASnet/Internet Gateway Server (MIGS), a combination of hardware and software that allows access to the NCAR Mainframe and Server Network (MASnet) from computers attached to the Internet. MIGS provides an easy way to access the Cray computers, the Text and Graphics System (TAGS), and the Mass Storage System (MSS), as well as other components of the NCAR computing environment. This reference manual describes how to use MIGS from both your local system and from MASnet systems; it documents all parameters and describes how users can update their entries in the MIGS user database. Changes documented in this version include descriptions of SCD-defined verbs for accessing the MSS and the CRAY Y-MP2D (castle).

MIGS: MASnet/Internet Gateway Server Remote System Administrator's Guide,
Draft Version 1.1, August 1988, 25 pages

Describes how to install the MASnet/Internet Gateway Server (MIGS) at your local site. This document contains information on how to establish security and how to modify the MIGS defaults to meet your local site needs. Special sections cover UNIX and VMS implementation. This document is for use by local MIGS systems administrators, not users. It is a supplement to *MIGS: MASnet/Internet Gateway Server Reference Manual*.

MIGS: MASnet/Internet Gateway Server User Guide,
Version 3.0, March 1992, 31 pages

Contains an introduction to the MASnet/Internet Gateway Server (MIGS), instructions for accessing MIGS from the Internet, a table of MIGS verbs and their parameters, and descriptions and examples for each verb. Changes documented in this version include descriptions of new SCD-defined MIGS verbs, which mainly provide access to utilities for the Mass Storage System (MSS) and the CRAY Y-MP2D (castle). This document also includes the "MIGS Quick Reference."

MIGS Quick Reference,
Version 3.0, March 1992

Summarizes MASnet/Internet Gateway Server (MIGS) verbs and options in reference-card format.

NCAR Gopher: A Data Retrieval System,
Version 1.0, February 1993,
6 pages

Provides information about using the Internet Gopher software, which provides access to databases and files stored on computers all over the world. The software is available on SCD's front-end UNIX computer, meeker.ucar.edu. The document also includes information for system administrators who want to install Gopher on other computers. See the "Gopher" section in this catalog for more information.

Using the 1-800 Connect Account to Access NCAR and UCAR Computers,
Version 1.0, April 1992, 3 pages

Provides instructions on how to use the 1-800 connect account for remote-site users who need to access computers at NCAR or the University Corporation for Atmospheric Research (UCAR) over phone lines.

Using FTP for File Transfer at NCAR,
Version 2.0, March 1993,
11 pages

Explains basic concepts and documents the most commonly used commands for using File Transfer Protocol (FTP), a reliable method of transferring files from one computer to another over the Internet. This UserDoc discusses using FTP from UNIX computers and from DOS and Macintosh computers at NCAR.

Using the NCAR E-mail System,
Version 1.0, March 1989,
22 pages

Also available online from anonymous FTP

Discusses sending e-mail from and to NCAR via SPAN (Space Physics Analysis Network), BITNET (Because It's Time Network), UUCP (UNIX-to-UNIX Copy), CSNET (Computer and Science Network), and Telemail/Omnet. This document covers basic address syntax and describes how to use the query/change software to look up addresses. It is also available via anonymous File Transfer Protocol (FTP) from ftp.ucar.edu under the pathname **docs/networking/email**.

Using UNIX E-mail,
Version 1.0, February 1992,
15 pages

Provides information on the basic UNIX electronic mail functions of the Berkeley mail program, such as how to send, read, save, reply to, delete, and quit mail. It also covers editing and forwarding e-mail and using aliases for addresses. The document includes a quick reference guide to mail commands.

Output services (Text and Graphics System—TAGS)

Note: For information on producing computer-generated films and videos, see "A Guide to the Production of Computer-Generated Films at NCAR" and "A Guide to the Production of Computer-Generated Video Animations Using TAGS" in the "Graphics" section of this catalog. For TAGS access via IRJE, see "IRJE: Using the NCAR Internet Remote Job Entry System" in the "Networking and data communications" section of this catalog.

**NCAR Raster Interchange
Format and TAGS Raster
Reference Manual,**
Draft Version 1.1, April 1990,
34 pages

Describes the native and encapsulated NCAR Raster Interchange Format (NRIF) formats and some of the ways they can be used to produce raster output at NCAR. This document also explains the various ways you can define color in NRIF files and tells how NRIF files are mapped on the Dicommed film recorders attached to the Text and Graphics System (TAGS).

**Text and Graphics System
Reference Manual,**
Version 3.0, March 1993,
58 pages

Also available online via
anonymous FTP

Describes the Text and Graphics System (TAGS), explains all TAGS parameters (including ways to customize your output format), and describes special considerations for film and video output. Appendixes provide hints on using color and instructions for customizing the placement of images in film frames. This manual includes information on graphical parameters for production of videotapes, file formats accepted by TAGS (including PostScript, raster, ASCII, Computer Graphics Metafiles [CGMs], and several others), and videotape formats produced by TAGS.

This document is also available via anonymous File Transfer Protocol (FTP) from [ftp.ucar.edu](ftp://ftp.ucar.edu) under the pathname **docs/graphics/TAGS.3.0**.

Using the Text and Graphics System from UNIX and UNICOS Computers,
Version 2.0, August 1991,
35 pages

Describes Text and Graphics System (TAGS) access from UNIX and UNICOS computers and how to process graphics files and ASCII text on black-and-white film, color film, and fiche. This document provides examples and explains the most commonly used parameters.

Using the Text and Graphics System via the MASnet/Internet Gateway Server,
Version 2.0, August 1991,
33 pages

Describes Text and Graphics System (TAGS) access via the MASnet/Internet Gateway Server (MIGS) and how to process graphics files and ASCII text on black-and-white film, color film, and fiche. This document provides examples and explains the most commonly used parameters.

UNIX

Note: For information on using UNIX electronic mail, see "Using UNIX E-mail" in the "Networking and data communications" section of this catalog.

**CMS-UNIX Conversion
Guide and SCD UNIX
Basic Usage Guide,**
Version 1.1, January 1992,
272 pages

Provides UNIX conversion information for former users of the IBM 4381 front-end computer (which ran VM/CMS), including a chapter of commonly used CMS commands and their UNIX replacements. Section II covers the basics of the UNIX operating system, UNIX shells, the **vi** editor, and e-mail. Section III documents how to access SCD computing resources from the SCD UNIX front-end computer (meeker). It includes details about using local commands for submitting jobs to the Cray supercomputers, using the Mass Storage System (MSS), obtaining output, and restoring the backup copy of a file.

Elementary UNIX,
Draft Version 1.1, January 1990,
19 pages

Explains the fundamentals of UNIX and provides a description of the most important UNIX commands that users of the CRAY Y-MP8/864 (shavano) at NCAR will need to start computing with UNICOS.

**The XC Editor: An XEDIT
Simulator Program,**
Version 1.1, July 1992, 142 pages

Provides explanations of all the XC commands in alphabetical order. XC is an XEDIT-style editor written for the UNIX environment, and is available on the SCD UNIX front-end computer (meeker). This document is a complete reprint of the XC documentation from the product creator, Syllabi, Inc.

Additional topics

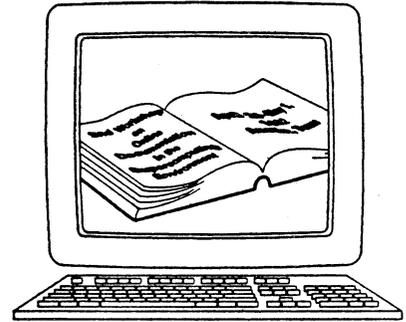
Data Availability at NCAR,
June 1989, 45 pages

Summarizes the datasets available from the SCD Data Support Section. Data can be copied on tape at cost, or they can be used online at NCAR by those who have an NCAR computing project number. Datasets include daily analyses, geophysical data, cloud data, climatologies, paleoclimate data, and many other types of data for use in numerical experiments in the atmospheric and oceanic sciences. Additional references are cited.

**Datasets for
Meteorological Research,**
July 1975, 194 pages

Contains information about various datasets that are available for meteorological and oceanographic research and gives basic information about the data or types of data. A list of addresses and a bibliography in the back of the manual provide sources of additional information.

ONLINE DOCUMENTATION



SCD Daily Bulletin

The Daily Bulletin is an online daily status report of all SCD computing systems. It is the most current source of news about computing at NCAR, giving information about hardware, software, documentation, communication links, and scheduled and unscheduled computer downtime.

The Daily Bulletin is prepared weekdays by the SCD Consulting Office between 08:45 and 09:00 Mountain Time and again, if necessary, at 16:00.

If you have questions about accessing the Daily Bulletin, please contact the SCD consultant on duty by sending e-mail to consult1@ncar.ucar.edu or calling (303) 497-1278.

Interactive access

If you log into the CRAY Y-MP8/864 (shavano), the UNIX front-end computer (meeker), or one of the NCAR divisional computers, type:

dailyb

IRJE access

If you use the Internet Remote Job Entry System (IRJE), use File Transfer Protocol (FTP) to access the computer named windom.ucar.edu. Once you have logged into your account, type:

get .dailyb filename

where *filename* is the name you assign to the file on your computer.

MIGS access

If you use the MASnet/Internet Gateway Server (MIGS) from your local computer, type:

nrnet dailyb filename

where *filename* is the name you assign to the file on your computer.

FTP access

The Daily Bulletin is also available via anonymous FTP from the computer named ftp.ucar.edu in the top-level directory with the filename **dailyb**. For directions on how to obtain the Daily Bulletin and other SCD documents via anonymous FTP, see the "Anonymous FTP" chapter in this catalog.

SCD computational servers

CRAY Y-MP8/864 (shavano)

Man pages

All user commands, system calls, libraries, and special files on the CRAY Y-MP8/864 (shavano) running UNICOS are available as online manual, or **man**, pages. To access a **man** page, at the prompt (%) type:

man *command*

where *command* is the name of the command for which you want the **man** page. There is even a **man** page for **man** (type **man man**).

In addition to the UNICOS **man** pages, the following "local" **man** pages (categorized here by functionality) are available on shavano.

Graphics

cgm2ncgm	Convert a standard Computer Graphics Metafile (CGM) to an NCAR CGM
ctrans	NCAR Computer Graphics Metafile (CGM) translator
fcaps	Report available fontcaps
findg	Locate calls to all entries in pre-Graphical Kernel System (GKS) NCAR Graphics
fontc	Fontcap preprocessor
f2smpte	Calculate videotape edit points
gcaps	Report available graphcaps
graphc	Graphcap preprocessor
ictrans	User interface to NCAR CGM translator ctrans
idt	X Window System interactive image display tool
med	NCAR CGM frame editor
ncargcc	Compile C code that uses NCAR Graphics
ncargcex	Run NCAR Graphics C examples and tests
ncargex	Run NCAR Graphics Fortran examples and tests
ncargf77	Compile FORTRAN 77 code that uses NCAR Graphics
ncargfile	Copy the area identifier table for Ezmap to your current working directory
ncargrun	Invoke a program that uses GKS library
ncargsrc	Retrieve NCAR Graphics source code
ncgm2cgm	Convert an NCAR CGM to a standard CGM
pre2ncgm	Convert a pre-GKS CGM to an NCAR CGM
plotmp	Plot CGM on Xerox 4050

rascat	Convert/concatenate various types of raster files
rasgetpal	Extract the color palette of a raster file and write it to standard out
rasls	List characteristics of raster files
rassplit	Split a multiframe raster file into single-frame raster files
rasview	X Window System raster file previewer

Note: In addition to the above commands, **man** pages for all the NCAR Graphics utilities, user entry points, user-modifiable internal routines, and parameters are installed on all computers on which NCAR Graphics is installed. For more information, see the **man** page for **ncargintro**.

Languages/editors/interpreters

editor	Editor for card-image files
iftran	IFTRAN preprocessor
perl	perl interpreter

Mainframe and Server Network (MASnet)

maserr	Display MASnet error messages
netxx	Interface to MASnet

Mass Storage System (MSS)

mschg	Change passwords, retention period, comments of MSS file
mserror	Retrieve an error message (this is a subroutine)
msexport	Copy MSS file to tape
msimport	Copy tape file to MSS
msinfo	List MSS file information (more powerful than msls)
msls	List MSS file information
msmv	Rename MSS file; also change password, retention period, comment
msoffline	Ensure MSS file is on an offline medium
msonline	Ensure MSS file is on an online medium
msread	Copy MSS file to disk (this is both a command and a subroutine)
msrecall	Wait for asynchronous read/write to complete (this is a subroutine)
mstrm	Remove MSS file
mstouch	Touch MSS file
mswait	Check status of asynchronous read/writes (this is a subroutine)
mswrite	Write disk file to MSS (this is both a command and a subroutine)

Math libraries

alfpack	Associated Legendre polynomials
amoslib	Special functions
netcdf	Unidata Network Common Data Form (netCDF) C library
crayfish	Vectorized version of Fishpak (same as crayfishpak)
crayfishpak	Vectorized version of Fishpak (same as crayfish)
ecmfft	Multiple fast Fourier transform (FFT) package
eda	Exploratory data analysis
fftpack	Fast Fourier transforms
fishpak	Separable elliptical partial differential equation solvers
fitpack	Curve and surface fitting
fnetcdf	Unidata Network Common Data Form (netCDF) Fortran library
funpack	Special functions
hdf	Hierarchical Data Format (HDF) library
imslcnv	Routines for converting International Mathematical and Statistical Library (IMSL) Edition 9.2 to IMSL Edition 10.0
imslma	IMSL mathematical library
imslsf	IMSL special functions library
imslst	IMSL statistics library
lapack	Solvers for dense linear systems
minpack	Nonlinear equation solvers
mudpack	Elliptical partial differential equation solvers
nag	General math and statistics library
ncarm	NCAR math historical routines
ncaro	NCAR input/output (I/O) historical routines
netcdf	Unidata Network Common Data Form (netCDF) library
odepack	Solvers for ordinary differential equations, initial value problems
slatec	General math library—nonproprietary
sphere	Spherical harmonic analysis (same as spherepack)
spherepack	Spherical harmonic analysis (same as sphere)
ssdlin	Out-of-core linear solvers using the CRAY Solid-state Storage Device (SSD)
starpac	Time series, regression solvers, statistical analysis

Miscellaneous

a2p	awk to perl translator
batchname	Name Network Queuing System (NQS) batch job output file
bsplit	Split a large binary file into smaller files
cosconvert	Convert a COS-blocked file to UNIX
cosfile	Report characteristics of a COS-blocked file
cossplit	Split a multifile COS-blocked dataset into single COS-blocked files
epoch	Display number of seconds from the epoch (Jan. 1, 1970)
findsub	Find which library a subroutine is in
flint	Fortran source code analyzer
future	Display seconds between the epoch (Jan. 1, 1970) and a future time

gaus	Display allocated/used General Accounting Units (GAUs) for a project
hints	Hints about various topics
h2ph	Convert a C header file to perl
icsleft	Return the number of CPU seconds left in the current job (this is a subroutine)
iqsleft	Return the number of seconds remaining before the NQS queue terminates (this is a subroutine)
less	Display a file
mk	Maintain (make) related files
msdirect	Restore user directory (backed up on Mass Storage System [MSS])
msrestore	Restore user files (backed up on MSS)
ncdump	Translate Network Common Data Form (netCDF) to ASCII
ncgen	Compile netCDF descriptions
primer	Copy files described in the <i>NCAR UNICOS Primer</i>
pshell	Run a program that is calling ishell
qstat	Display NQS batch queues
sccs	Run Source Code Control System (SCCS)
s2p	Translate sed to perl

Printing

manprint	Print a man page to the SCD Xerox 4050 printer
pcprint	Print a file onto a printer attached to a personal computer
xprint	Print a file to the SCD Xerox 4050 printer

Text and Graphics System (TAGS)

droptg	Drop a TAGS job
sendmstg	Send a Mass Storage System (MSS) file to TAGS
sendtg	Send a file to TAGS
stattg	Check status of TAGS queues

The UNICOS news command

The **news** command is a regular UNICOS command for finding current computing news. When you log into the CRAY Y-MP8/864 (shavano), you typically will see a message indicating there is a new **news** item. If the name of an item is given, you may type

news item

to see the item. Or you may simply type

news

Note that the system “ages off” news items after you have read them. That is, they will not appear again, unless you repeat the **news** command using the specific item name.

News items are archived in **/usr/news**; you may retrieve old items from that directory if you need them. Since the number of items currently stored isn't large, you may still want to see them all again, which you can do with the **-a** (“all”) option.

Because the news tends to flash by in one continuous stream, you will want to pipe the command through a paging option, such as **more**; for example:

```
news -a | more
```

There's also a **-n** option that lists the names of news items. Type **man news** for more information.

Note: The online Daily Bulletin, another major source of current SCD news items, is also available on shavano via the **dailyb** command; it may also be accessed via the Internet Remote Job Entry System (IRJE), the MASnet/Internet Gateway Server (MIGS), or anonymous FTP. For further information on the Daily Bulletin, see the “How to Access the Daily Bulletin” section in this catalog.

The hints command

SCD has installed numerous local online documents on the CRAY Y-MP8/864 (shavano) to give you conversion hints, recent updates, and information about local features. A local **hints** command has been installed for accessing these documents. To obtain a list of locally written online documents available on shavano, at the prompt type:

```
hints gettingstarted
```

You may also use the **hints** command to search for keywords if you are unsure of the filename but have a specific topic in mind. You use the **-k** option (similar to the **-k** option for **man** pages) as follows:

```
hints -k search_topic
```

Consult the **man** page (type **man hints**) for further instructions.

The following **hints** documents are available on shavano:

batch	Batch submittal options
charges	How your jobs are charged
checkpointing	Checkpointing tips: How to protect your long-running batch jobs

conversion	COS-to-UNICOS conversion options
craymans	UNICOS manuals available from Cray Research
dropjobs	How to drop Network Queueing System (NQS) batch jobs and interactive jobs from shavano
e-mail	Sending e-mail from shavano (mail receipt is disabled)
formats	UNICOS file formats for Fortran users
ftp	Transferring files to and from shavano using File Transfer Protocol (FTP). (Note: ftp is also a UNICOS command, for which there is a man page.)
gettingstarted	Getting started with UNICOS; a list of available local documents (this list)
ishell	Determining exit status from ishell
libraries	Linking software libraries into your program
login	CRAY Y-MP login request form. (Note: login is also a UNICOS command, for which there is a man page.)
paging	Tips for reading online manual pages; choosing between pg -style paging and more -style paging
pshell	Using pshell (with ishell) for executing UNICOS shell commands from within your Fortran program
queues	Current shavano job queues
scripts	Using shell scripts to submit batch jobs to shavano
sed	Conversion of EDITOR commands using sed
tmpdir	How to use your unique, temporary directory in usr/tmp , \$TMPDIR
unix_books	Recommended books about UNIX

Example NQS script files on shavano

In response to user request, SCD has installed two example Network Queueing System (NQS) script files online; these are available in the `/usr/skel` subdirectory on the CRAY Y-MP8/864 (shavano). (The name `skel` stands for "skeleton files.") NQS script files are used when submitting batch jobs; you may want to copy, modify, and use these example script files to submit your own batch jobs. There is one file for the C shell (with the filename `cshell.nqs`) and one for the Bourne shell (`bourne.nqs`).

The `README` file in the `skel` subdirectory provides more information on using these files. If you have questions about using or modifying any of these files, please contact the SCD consultant on duty by sending e-mail to `consult1@ncar.ucar.edu` or calling (303) 497-1278.

As the shavano configuration and user requirements change, we will continue to modify these files and place the latest version in the `skel` subdirectory so that you may copy them to your own workspace and modify them for your own use.

Docview

The Docview online documentation system is available on the CRAY Y-MP8/864 (shavano) under UNICOS 6.1. Docview allows you to view information online or to write it to a file. It offers a system of menus to help you access information. Each document in the Docview library is identified by a unique *docname* (an abbreviated document name), and each document consists of passages that are identified by specific keywords. Docview also lets you examine all keywords associated with a particular document. Currently, Docview is an interactive tool and is therefore not suitable for batch use.

The Docview utility is based on the DOCUMENT program, which was developed by the National Energy Research Supercomputer Center (NERSC) at the Lawrence Livermore National Laboratory. It was ported to UNICOS as a joint project between Cray Research and the National Center for Supercomputing Applications (NCSA).

Many Cray manuals now online

Docview comes with online Cray manuals, and will allow the addition of local documents as well. Manuals online under Docview are listed below. (The *docname* is followed by the document title.)

UNICOS60notice	<i>UNICOS 6.0 Release Notice, UC-06.0-UAN-RN</i>
	Note: The licensing and document ordering information for UNICOS 6.0 has not been included in the Docview version of the <i>UNICOS 6.0 Release Notice</i> . This information is available online from anonymous File Transfer Protocol (FTP) under the pathname docs/cray/unicos6/cray.release/ordering . For information on using anonymous FTP, see the "Anonymous FTP" section in this catalog. (Documentation for UNICOS 6.0 is also applicable to UNICOS 6.1.)
admin	<i>UNICOS System Administration, SG-2113</i>
c.std	<i>Cray Standard C Programmer's Reference Manual, SR-2074</i>
cdbx61	<i>UNICOS CDBX Symbolic Debugger Reference Manual, SR-2091</i>
doc.writer	<i>Docview Writer's Guide, SG-2118</i>
docview	<i>Docview User's Guide, SG-2109</i>
fortran	<i>CF77 Compiling System, Vol. 1: Fortran Reference Manual, SR-3071</i>
parallel	<i>CF77 Compiling System, Vol. 4: Parallel Processing Guide, SG-3074</i>
pascal	<i>Pascal Reference Manual, SR-0060</i>
perf	<i>UNICOS Performance Utilities Reference Manual, SR-2040</i>
preview70	<i>UNICOS 7.0 Release Preview, PV-5000 7.0</i>
primer	<i>UNICOS Primer, SG-2010</i>
segldr	<i>Segment Loader (SEGLDR) and ld Reference Manual, SR-0066</i>
support	<i>UNICOS Support Tools Guide, SG-2016</i>
tape.user	<i>UNICOS Tape Subsystem User's Guide, SG-2051</i>
tcpip.user	<i>TCP/IP Network and OSI User's Guide, SG-2009</i>
unicos61.rn	<i>UNICOS 6.1 Release Notice, UC-061UANRN</i>
usm	<i>UNICOS Source Manager (USM) User's Guide, SG-2097</i>
x.window	<i>UNICOS X Window System Reference Manual, SR-2101</i>

Getting started with Docview

To get started with Docview, type:

```
docview
```

The Docview main menu will be displayed, along with the Docview prompt (>). There is also a **docview man** page. For further assistance in using Docview, contact the SCD consultant on duty by sending e-mail to consult1@ncar.ucar.edu or calling (303) 497-1278.

UNIX front-end computer (meeker)

Man pages

The following "local" **man** pages (categorized here by functionality) are available on meeker.

Cray computers

cjob	Submit a batch job to the CRAY Y-MP2D (castle)
gather	Gather files together and optionally submit to the CRAY Y-MP8/864 (shavano) or to castle
shjob	Submit a batch job to shavano

Graphics

cgm2ncgm	Convert a standard Computer Graphics Metafile (CGM) to an NCAR CGM
ctrans	NCAR Computer Graphics Metafile (CGM) translator
fcaps	Report available fontcaps
findg	Locate calls to all entries in pre-Graphical Kernel System (GKS) NCAR Graphics
fontc	Fontcap preprocessor
f2smpte	Calculate videotape edit points
gcaps	Report available graphcaps
graphc	Graphcap preprocessor
ictrans	User interface to NCAR CGM translator ctrans
idt	X Window System interactive image display tool
imconv	Image Tools package from San Diego Supercomputing Center (includes commands: imcopy , imfile , imflip , imformats , imgray , immono , impaste , imscale)
med	NCAR CGM frame editor
ncargcc	Compile C code that uses NCAR Graphics

ncargcex	Run NCAR Graphics C examples and tests
ncargex	Run NCAR Graphics Fortran examples and tests
ncargf77	Compile FORTRAN 77 code that uses NCAR Graphics
ncargfile	Copy the area identifier table for Ezmap to your current working directory
ncargrun	Invoke a program that uses GKS library
ncgm2cgm	Convert an NCAR CGM to a standard CGM
plotmp	Plot CGM on SCD Xerox 4050 printer
pre2ncgm	Convert a pre-GKS CGM to an NCAR CGM
rascat	Convert/concatenate various types of raster files
rasgetpal	Extract the color palette of a raster file and write it to standard out
rasls	List characteristics of raster files
rassplit	Split a multiframe raster file into single-frame raster files
rasview	X Window System raster file previewer

Note: In addition to the above commands, **man** pages for all the NCAR Graphics utilities, user entry points, user-modifiable internal routines, and parameters are also available on all computers on which NCAR Graphics is installed. For more information, see the **man** page for **ncargintro**.

Languages/editors/interpreters

emacs	Emacs editor
ksh	Korn shell
perl	perl interpreter
xc	Editor similar to CMS's XEDIT

Mainframe and Server Network (MASnet)

maserr	Display MASnet error messages
netxx	Interface to MASnet

Mass Storage System (MSS)

mschg	Change passwords, retention period, comments of MSS file
msexport	Copy MSS file to tape
msimport	Copy tape file to MSS
msinfo	List MSS file information (more powerful than msls)
msls	List MSS file information
msmv	Rename MSS file; also change password, retention period, comment
msoffline	Ensure MSS file is on an offline medium
msonline	Ensure MSS file is on an online medium
msread	Copy MSS file to disk

mrm	Remove MSS file
mstouch	Touch MSS file
mwrite	Write disk file to MSS

Miscellaneous

bison	GNU Project parser generator (yacc replacement)
cmsconvert	Unload CMS disk dump files into UNIX text files
dired	A directory editor
elm	Friendly interface to using mail
kermit	Transfer files to another computer with Kermit
lc	Convert filenames to lower case
less	Display a file
msrestore	Restore user files (backed up on Mass Storage System)
top	Display and update information about the top CPU processes
traceroute	Print the route packets take to network host

Printing

manprint	Print a man page to the SCD Xerox 4050 printer
pcprint	Print a file onto a printer attached to a personal computer
xlaser	Send a tbl/troff dataset to the SCD Xerox 4050 printer
xprint	Print a file on the SCD Xerox 4050 printer

Text and Graphics System (TAGS)

droptg	Drop a TAGS job
sendmstg	Send a Mass Storage System (MSS) file to TAGS
sendtg	Send a file to TAGS
stattg	Check status of TAGS queues

Word processing/formatting/postscript

dx4050	Prepare ditroff documents for a Xerox Graphics Handling Options (GHO) printer
dxeqn	Typeset mathematics for a Xerox GHO laser printer
enscript	Convert text files to PostScript
ps4014	Convert a Tektronix 4014 file to PostScript
ps630	Convert Diablo 630 print files to PostScript
pscatmap	Build ptroff width tables PostScript fonts
psdit	Convert ditroff intermediate format to PostScript
psplot	Convert plot(5) files to PostScript
psrev	Select or reverse page order of a PostScript file
psroff	Ditroff to PostScript
ptroff	Troff to PostScript

Usenet

gopher	Connect to Gopher document server
newsgroups	A program to list unsubscribed newsgroups
Pnews	A program for posting news articles
rn	Read news program
Rnmail	A program for replying via mail

Anonymous FTP

Documentation available via anonymous FTP

Text-only versions of SCD UserDocs are available via anonymous File Transfer Protocol (FTP) from the computer named ftp.ucar.edu. The **docs** directory contains subdirectories (categories) in which the documents can be found. Below is a list of these documents by subdirectory within the **docs** directory. Instructions on obtaining these files follow the list.

README

List of SCD documentation files contained in **docs** subdirectory

catalog/

orderform.catalog

Order form for SCD documents

userdoc.catalog

User Documentation Catalog, latest version

cray/

extended_queues

"Using extended job class queues on NCAR's CRAY Y-MP8/864 supercomputer," May 1992

ieee_conversion

"Creating and using 64-bit IEEE files on shavano"

io.buffersize

"How to size your I/O buffers"

preallocate

"Always preallocate disk space"

ssd

"Solid-state Storage Device (SSD) policy takes effect"

unicos6/

cray.release/

differences

Compatibilities and differences from previous versions of UNICOS

libraries

Enhancements to Cray libraries, including Fortran, scientific libraries, and other utilities

network

Network software enhancements under UNICOS 6.0, including X Window, High Performance Parallel Interface (HIPPI) and Fiber Distributed Data Interface (FDDI) support

ordering

Information on licensing and documentation ordering

overview

Description of the release package, optional software, and compilers supported by UNICOS 6.0

software

Enhancements to software products, including the CDBX debugger, performance tools, SEGLDR, message system, and Docview

support

Documentation and training available from Cray Research; migration from COS

system

Enhancements to the operating system, including accounting, Network Queueing System (NQS), and new system calls

scd.articles/

cdbx.improved

"A better CDBX: Symbolic debugger enhanced in UNICOS 6.1"

director

"SCD Director's Column"

docs.hardcopy

"UNICOS documents distributed by Cray"

docs.online

"Docview provides UNICOS documents online"

error.msgs

"Error messages under UNICOS 6.1"

fortran.io.changes

"Fortran I/O changes in UNICOS 6.1"

korn.shell

"Introducing the Korn shell: A better interface to UNICOS"

library.changes

"Library changes under UNICOS 6.1"

overview

"UNICOS 6.1 replaces UNICOS 5.11"

segldr.changes

"SEGLDR changes under UNICOS 6.1"

tools.performance

"Improved performance analysis tools in UNICOS 6.1"

unicos7/

7.0_release_overview/

An overview of the UNICOS Operating System 7.0, with eight sections and three appendixes

graphics/

TAGS.3.0

Text and Graphics System (TAGS) Reference Manual, Version 3.0, March 1993

tags.enhancements

TAGS accepts transparent format, supports Mass Storage System (MSS) read passwords, requires MACR parameter

tags.matrix

Input files and output formats currently supported by TAGS

tags.postscript.processing

TAGS/Xerox Computer Graphics Metafile (CGM) and PostScript processing

tags.xerox.processing

TAGS 4050 graphics and PostScript processing

intro/

primer.update

"Update for the NCAR UNICOS Primer," Version 1.1, April 1992

mss/

msinfo

Description of the **msinfo** batch command file (how to obtain batch listings on the Mass Storage System [MSS])

**networking/
email**

"Using the NCAR E-mail System," Version 1.0, March 1989

irje

"IRJE: Using the NCAR Internet Remote Job Entry System," Version 5.2, June 1992

network.terms

"Glossary of Networking Terms and Acronyms," Version 1.0, August 1989

newsletter/

index89

1989 index of *SCD Computing News* articles

index90

1990 index of *SCD Computing News* articles

index91

1991 index of *SCD Computing News* articles

index92

1992 index of *SCD Computing News* articles

index93

1993 index of *SCD Computing News* articles

other/

acronyms

"Acronyms and Terms Frequently Used in the SCD Computing Environment," Version 1.0, November 1988

charges.gau

"Charges for SCD Computing Resources," Version 7.3, January 1993

op.schedule

Current operations schedule of major NCAR computers

refs.consult

List of all reference materials available in the User Reference Section of the Mesa Lab and Foothills Lab SCD consulting offices

scdug/**scdug.mon**

Reports on the SCD User's Group meeting for the indicated month, where *mon* indicates the month (for example, **scdug.feb**)

software/**fishpak**

"FISHPAK: A Package of Fortran Subprograms for the Solution of Separable Elliptic Partial Differential Equations," Version 2.0, March 1990

unix/**sed**

"Conversion of EDITOR Commands Using **sed**," May 1990

How to use anonymous FTP

To obtain copies of online documents, follow the steps below.

1. From your local computer connected to the Internet, type:

```
ftp ftp.ucar.edu
```

or

```
ftp 128.117.64.4
```

2. When prompted for a login name, type:

```
anonymous
```

Note: If your local computer is a Digital Equipment VAX running VMS, you may need to type:

```
"anonymous"
```

3. Enter your login ID at the password prompt and wait for the ftp> prompt.

You can obtain a **README** file with a list of the documentation categories (subdirectories) currently available by typing:

```
cd docs  
get README  
quit
```

You can read the **README** file using your own system tools.

If you already know the subdirectory you want, you can use the **dir** (or **ls**) command within directories to list the contents.

4. To transfer a file to your present working directory on your local computer, change directories to the desired subdirectory of **docs** and use the **get** command. For example:

```
cd cray  
get filename
```

where *filename* is the name of the file you want to transfer.

Caution: If your local computer already has a file with a name identical to the one you want to transfer, your existing file will be replaced with the new file. To give a file a new name on your local computer, type:

```
get filename newfilename
```

5. To terminate the anonymous FTP session, type:

```
quit
```

Distributed Software Libraries (DSL/XmDSL)

The Distributed Software Libraries (DSL) utility allows you to take advantage of the excellent software libraries supported at NCAR. DSL lets you access NCAR's public domain software libraries, search for subprograms to solve your mathematical problems, and return the appropriate software or documentation to your local computer anywhere on the Internet. The screen-oriented, menu-driven version of this utility has been available for the past few years, and now there is a new version for the X Window System called XmDSL.

How to access DSL

You can access DSL via Telnet or the Private Automatic Computer Exchange (PACX) port selection device.

Telnet access

Use Telnet to access the DSL server by typing:

```
telnet dsl.ucar.edu
```

or

```
telnet 128.117.64.4
```

If you have never used the **telnet** command, you may first want to read your computer's **help** or **man** file for this command.

PACX access

Access the PACX via Telenet, modem, or internal connection. At the prompt, type **ncar**.

```
Enter class: ncar  
Transferring control to host ...
```

Logging in

When prompted for a login name, type:

dsl

If prompted for a password, type:

software

If prompted for your terminal type, enter the name of your terminal type. Several examples of terminal types will appear on your screen: vt100, tvi950, adm3a, sun, and tek4107. If you have a terminal type not shown (such as tek4010), try typing the name without capital letters or spaces. If the DSL server does not recognize your terminal type, or if you press the RETURN key with no entry, the terminal type will default to vt100.

After you log in as **dsl**, the main DSL menu with a short description of each of its options appears on your screen. To use DSL, type the appropriate menu option followed by RETURN. A **help** option is also available.

To exit DSL

To exit DSL, type **q** for quit.

How to access XmDSL

Before you can start XmDSL, it needs authority to connect to your X Window display. Type:

xhost +dsl.ucar.edu

from your X Window server's controlling host (usually the console window).

To access XmDSL by Telnet, type:

telnet dsl.ucar.edu

When prompted for a login name, type:

xmdsl

When you receive the "DISPLAY = (host.domain:0)" prompt, type:

```
host.domain:0
```

where *host.domain* is the name of your X Window display.

The following message will appear on your screen:

```
Disconnecting terminal and starting XmDSL  
Please be patient!  
Connection closed by foreign host.
```

This means your terminal is being disconnected from the DSL server; in a moment, the main XmDSL window will appear on your screen.

Once the main XmDSL window appears, click on the appropriate button to navigate through the program. A **help** button is available.

To exit XmDSL

To exit XmDSL, click on the QUIT button.

FTP access of DSL libraries

All the information supported by DSL is also available via anonymous FTP. To use FTP, type the following from your home host:

```
ftp dsl.ucar.edu
```

When prompted for a login name, type:

```
anonymous
```

Enter your last name at the password prompt, wait for the ftp> prompt, then type:

```
cd dsl/lib
```

To obtain a list of the math libraries or library documentation available from DSL, type:

```
ls
```

To copy an entire library, type:

```
prompt
cd library_name
mget *
quit
```

where *library_name* is the name of the math library that you want. If you wish to get an individual routine, instead of using **mget ***, use **get *routine.f***, where *routine* is the name of the routine you want and **.f** specifies Fortran. A **.c** extension specifies C, a **.s** extension specifies CAL, and a **.d** extension specifies documentation.

For more information

For detailed information on how to use DSL and XmDSL, see the SCD UserDoc "Distributed Software Libraries," described in this catalog in the "Applications software" section. You can also contact the SCD consultant on duty by sending e-mail to consult1@ncar.ucar.edu or calling (303) 497-1278.

Gopher

The Internet Gopher software is an information distribution system that gives you access to databases and files that are stored on computers all over the world. You can browse through a hierarchy of information and easily select items of interest.

The Internet Gopher software was developed by the Computer and Information Services Department of the University of Minnesota. The software is free and has been installed at many sites worldwide.

The NCAR Gopher server gives you access to local databases, such as the UCAR/NCAR e-mail address and phone directory and the NCAR library catalog. NCAR Gopher also provides access to databases at other Gopher sites.

How to access Gopher

To access NCAR Gopher from the SCD UNIX front-end computer (meekeu.ucar.edu), type:

gopher

The NCAR Gopher main menu appears on your screen.

Move the cursor to the line of your selection by typing the number of the item and pressing RETURN or by using the arrow keys; press RETURN to make the selection. After the connection is made, follow the instructions on the screen.

Press **q** to quit.

For detailed instructions on how to use Gopher, see the SCD UserDoc "NCAR Gopher: A Data Retrieval System," described in this catalog in the "Networking and data communications" section.

Archie

Archie is a computer program that maintains a constantly updated catalog of the contents of a large proportion of the world's anonymous File Transfer Protocol (FTP) archives.

Each month, Archie does an anonymous FTP search to all sites contained in its master list of sites and obtains a directory listing of the files available via anonymous FTP from each site. With Archie, you can search through the master list of FTP files, just as you might use a library catalog to find a book on a particular topic.

Archie's output includes the Internet domain name of the FTP host, the directory in which a file is located, the size of the file in bytes, and the date on which the file was placed in that FTP host. Once you've gotten this list of possible sources from Archie, simply FTP to a site that has what you need, go to the subdirectory in which Archie says the file is located, and copy the file to your own computer.

Archie was developed at McGill University in Montreal.

How to access Archie by Telnet

Use Telnet to access a remote Archie server by typing:

```
telnet remote.archie.server
```

where *remote.archie.server* is one of the computers listed below:

archie.rutgers.edu	New Jersey
archie.sura.net	Maryland
archie.unl.edu	Nebraska
archie.ans.net	New York, NY
archie.funet.fi	Finland
archie.doc.ic.ac.uk	United Kingdom
archie.cs.huji.ac.il	Israel
archie.au	Australia
archie.ncu.edu.tw	Taiwan
archie.wide.ad.jp	Japan

When prompted for a login, type:

```
archie
```

No password is required. You should see a short help screen giving some basic information on how to use the system. You can get additional help about Archie at any time during your session. To obtain a list of currently valid commands, type:

help

The basic search command of Archie is **prog**. To find all files that contain the word *textstring* in their files, type:

prog textstring

(You can get a full explanation of Archie syntax with the **help** command.)

To end your Archie session, type:

quit

For more information on using Archie, see "Consult Archie, the FTP archive guru, to find files" in the March 1992 issue of *SCD Computing News*.

SCD DOCUMENTATION ORDER FORM

The Scientific Computing Division (SCD) provides the following documents for NCAR/SCD computer users free of charge. To order documents by mail, check the titles you want, then provide your name and shipping address in the space at the end of this form. To order by phone or e-mail, see the instructions at the end of this form.

If you have questions about the content of a document, please call the SCD Consulting Office at (303) 497-1278. Documents are listed alphabetically by category.

Documentation checklist

Applications software

Data formats (HDF/netCDF)

- NCSA HDF Calling Interfaces and Utilities, Version 3.1, July 1990, 165 pages
- The netCDF User's Guide: An Interface for Data Access, Version 2.0, October 1991, 150 pages

Math libraries

- Distributed Software Libraries, Version 1.3, February 1993, 20 pages
- ECMFFT: Half-Complex Multiple Fast Fourier Transform Routines, Draft Version 1.0, June 1991
- FISHPAK: A Package of Fortran Subprograms for the Solution of Separable Elliptic Partial Differential Equations, Version 2.0, March 1990, 8 pages
- FITPACK: A Software Package for Curve and Surface Fitting Employing Splines Under Tension, Version 1.0, September 1987, 22 pages
- Getting Started with Mathematica on SCD's IBM RS/6000 Platform, Version 1.0, October 1992, 15 pages
- MUDPACK: Multigrid Software for Linear Elliptic Partial Differential Equations, Version 3.0, March 1991, 53 pages
- ODEPACK Reprints, Version 1.0, March 1989, 18 pages
- User's Guide to STARPAC: The Standard Time Series and Regression Package, STARPAC Version 2.07, October 1987, 300 pages

Miscellaneous applications

- GBYTES and SBYTES, Version 1.1, September 1988, 7 pages
- IFTRAN Preprocessor, Draft Version 2.0, April 1989, 27 pages

Cray computers

- Hints for Using shavano Efficiently and Reducing Your Charges, Version 1.0, August 1992, 19 pages
- IPT User's Manual, FORTRAN-lint™ Source Code Analyzer for UNIX-Based Operating System: Reprint, Version 2.90, March 1993, 44 pages

Graphics

- GFLASH—A Graphics Instruction Manipulation Package, Version 1.0, March 1989, 9 pages
- A Guide to the Production of Computer-Generated Films at NCAR, Version 3.0, January 1991, 20 pages
- A Guide to the Production of Computer-Generated Video Animations Using TAGS, Version 1.0, December 1992, 46 pages
- Interactive Modification of NCAR Graphics Plots via Macintosh Applications, Version 1.0, November 1990, 11 pages
- NCAR Computer Graphics Metafile Format Reference Guide, Version 1.0, April 1990, 5 pages
- User's Guide for NCAR GKS-0A Graphics, Version 3.0, April 1993, 124 pages

Introduction to the SCD computing environment

- Acronyms and Terms Frequently Used in the SCD Computing Environment, Version 1.0, November 1988, 12 pages
- Charges for SCD Computing Resources, Version 7.3, January 1993, 22 pages
- NCAR UNICOS Primer, Version 2.0, October 1990, 448 pages
- Supercomputing: The View from NCAR (FY92 Review and FY93-94 Development Plan for the NCAR Scientific Computing Division), January 1993, 193 pages

Mass Storage System

- Importing and Exporting Data between the Mass Storage System and Tape via MIGS, Version 1.1, February 1992, 29 pages
- Introduction to NCAR's Mass Storage System, Version 1.1, December 1992, 40 pages
- Reading, Converting, and Writing MSS Files on UNICOS, Version 1.1, August 1992, 20 pages

Networking and data communications

- Asynchronous Communications Packages for PC Users, Version 1.0, May 1989, 4 pages
- The Elm Reference Guide: Reprint, Version 2.2, April 1992, 28 pages
- The Elm Users Guide: Reprint, Version 2.2, April 1992, 12 pages
- Glossary of Networking Terms and Acronyms, Version 1.0, August 1989, 16 pages
- IRJE Quick Reference, Version 3.0, June 1992
- IRJE: Using the NCAR Internet Remote Job Entry System, Version 5.2, June 1992, 53 pages
- MICROCOM AX/9624c User Documentation, Version 1.0, March 1989, 3 pages
- MIGS: MASnet/Internet Gateway Server Reference Manual, Version 3.0, April 1992, 80 pages
- MIGS: MASnet/Internet Gateway Server Remote System Administrator's Guide, Draft Version 1.1, August 1988, 25 pages
- MIGS: MASnet/Internet Gateway Server User Guide, Version 3.0, March 1992, 31 pages
- MIGS Quick Reference, Version 3.0, March 1992
- NCAR Gopher: A Data Retrieval System, Version 1.0, February 1993, 6 pages
- Using the 1-800 Connect Account to Access NCAR and UCAR Computers, Version 1.0, April 1992, 3 pages
- Using FTP for File Transfer at NCAR, Version 2.0, March 1993, 11 pages
- Using the NCAR E-mail System, Version 1.0, March 1989, 22 pages
- Using UNIX E-mail, Version 1.0, February 1992, 15 pages

Output services (Text and Graphics System —TAGS)

- NCAR Raster Interchange Format and TAGS Raster Reference Manual, Draft Version 1.1, April 1990, 34 pages
- Text and Graphics System Reference Manual, Version 3.0, March 1993, 58 pages
- Using the Text and Graphics System from UNIX and UNICOS Computers, Version 2.0, August 1991, 35 pages
- Using the Text and Graphics System via the MASnet/Internet Gateway Server, Version 2.0, August 1991, 33 pages

UNIX

- CMS-UNIX Conversion Guide and SCD UNIX Basic Usage Guide, Version 1.1, January 1992, 272 pages
- Elementary UNIX, Draft Version 1.1, January 1990, 19 pages
- The XC Editor: An XEDIT Simulator Program, Version 1.1, July 1992, 142 pages

Additional topics

- Data Availability at NCAR, June 1989, 45 pages
- Datasets for Meteorological Research, July 1975, 194 pages

How to order documentation

- To order vendor documentation, see the information provided in this catalog under the entry of the vendor document that you want.
- To order NCAR Graphics documentation not listed on this order form, see the instructions in the "Graphics" section of this catalog.
- To order other documentation distributed by SCD, follow the instructions below.

By mail

To order by mail, fill out this order form and send it to:

NCAR
SCD/Documentation Distribution
P.O. Box 3000
Boulder, CO 80307-3000

Small documents will be sent to you first class, and larger documents will be shipped via United Parcel Service (UPS). (UPS will not deliver to a P.O. Box.) Documents will be shipped promptly.

Your shipping address (please print or type):

User number: _____

Name: _____

Department: _____
University/
Institution: _____

Street: _____

City: _____

State _____

Zip: _____

Phone: _____

Check here if this is a new address.

By phone

To place your order by phone, call (303) 497-1232.

By e-mail

To order by e-mail, obtain a copy of the online order form via anonymous File Transfer Protocol (FTP) from the computer named ftp.ucar.edu; the form is under the pathname **docs/catalog/orderform.catalog**. (See the "Anonymous FTP" section in this catalog for FTP access instructions.) E-mail the filled-out form to:

docorder@ncar.ucar.edu

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SCD computer schedule

The SCD computers run continuously, except for scheduled maintenance times and unforeseen equipment or power failures. The computers may be unavailable during the following times:

Computers	Days	Times (Mountain Time)
All computers	Daily as needed	06:00–08:30
CRAY Y-MP8 (shavano)	Every other Monday	05:00–08:00
CRAY Y-MP/2D (castle)	3rd Wednesday of month	05:00–08:00

The latest version of the operations schedule is available via anonymous FTP on ftp.ucar.edu under the pathname **/docs/other/op.schedule**. Read the online version of the Daily Bulletin for daily information on the status of all SCD equipment.

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