

Introduction

Overview

This introduction provides an overview of NCSA DataScope capabilities on the Macintosh. The organization and use of this manual are described and notational conventions explained.

About NCSA DataScope

NCSA DataScope is an interactive data analysis tool. As with NCSA DataScope 1.1, DataScope 2.0 allows you to display 32-bit floating-point scientific data values in spreadsheet form and as simple scaled, interpolated, or polar color images. Moreover, NCSA DataScope allows you to derive new datasets from your scientific data by entering analytic equations in a special notebook window, and to record and save your formulas, observations, and comments in a notebook window. You can also interchangeably copy and paste work among various programs, such as images between other NCSA software (NCSA Image, NCSA ImageIP, NCSA GelReader, NCSA PalEdit, NCSA Layout, etc.) and spreadsheet text between text processing software.

The data processing functions of NCSA DataScope allow you to:

- display 2D array data in a spreadsheet
- scale and generate color images from the data
- find the data values that correspond to points on an image
- enter and save comments and notations along with data
- apply calculations from internal and external functions to data to generate derived datasets

New Features

New features of NCSA DataScope 2.0 include the following:

- The ability to run programs on a remote host (e.g., a Cray) and then route the output back to DataScope on the Macintosh (in conjunction with NCSA Telnet 2.3MacTCP)
- The ability to use DataScope's notebook to apply external subroutines (e.g., residing on a Cray) to DataScope datasets, in

the same way that DataScope's external subroutine library on the Macintosh can be applied to DataScope datasets.

System Requirements

To run NCSA DataScope, you will need a Macintosh equipped with 256-color capability, one megabyte of RAM, and System software version 5.0 or later. You may see better performance with System software version 6.0.2 or later.

NOTE: The number and size of images and datasets loaded at one time are limited by memory size. Two megabytes or more are recommended for best results.

Use of This Manual

This section describes the organization of this manual, and the conventions and nomenclature used in developing it. Before using NCSA DataScope, you should be familiar with the Macintosh user interface, and know how to use menu bars, the mouse, and windows. If you have not used the Macintosh before, you may wish to refer to your Macintosh user's guide before using this package.

Organization of This Manual

This manual is organized into six chapters. Each page is given a unique number that consists of the chapter number, a period, and the number of that individual page (beginning with the first page of the chapter). For example, page 2.3 is the third page of the second chapter.

Manual Contents

This manual is organized into the following chapters:

Chapter 1, "NCSA DataScope Tutorial," presents a tutorial to familiarize you with the basic steps involved in using NCSA DataScope: installing and invoking the program, loading images and palettes from files, saving your work, using online help, and exiting the program.

Chapter 2, "Data in NCSA DataScope," describes various data types that NCSA DataScope can manipulate, and offers a brief tutorial that explains how to prepare your data in a format compatible with NCSA DataScope.

Chapter 3, "Window Types," describes the three types of windows that appear in NCSA DataScope—text, image, and notebook—and explains their special characteristics and functions.

Chapter 4, "Notebook Calculations," offers instructions about using the notebook window and libraries of functions to perform calculations on datasets and to derive new datasets.

Chapter 5, "Programs Run on Remote Hosts," describes DataScope's networking capabilities and its relationship with Telnet 2.3MacTCP.

Chapter 6, "NCSA DataScope and Other Programs," explains features of NCSA DataScope that make it compatible with other software and the procedures to be followed when using NCSA DataScope in conjunction with other programs.

Chapter 7, "NCSA DataScope Menus," reviews each of the menus that appear in NCSA DataScope's menu bar. A brief description of each command is accompanied by a reference to the chapter and section that discusses it in detail.

Appendix A, "Obtaining NCSA HDF," explains how to obtain NCSA HDF documentation and software free of charge via anonymous ftp, or at a small charge via catalog order.

Form of Presentation

The material in this manual is presented in text, screen displays, or entry format notation.

Text

In explaining various features and commands, this manual often presents a word within a paragraph in *italics* to indicate that the word is defined within the paragraph, or that the word is of particular importance and is being mentioned for the first time.

Portions of this manual refer to other sections or chapters of the manual where related topics are discussed. These cross references usually indicate the title of sections or chapters enclosed in quotation marks, such as, See Chapter 1, "NCSA DataScope Tutorial."

Screen Displays

Screen displays in this manual are presented in `courier type`.

Entry Format Notation

Throughout this manual, several explanations instruct you to make entries by typing on the keyboard. These entry instructions are printed in **`courier bold type`** and appear within a screen display, paragraph, or on a separate line.

Source code is displayed in 9 point `courier type`.

Keys that are labeled with more than one character (such as the RETURN key), are identified with all uppercase letters. Keys meant to be pressed simultaneously or in succession are linked with a hyphen. For example, press ⌘-A.

Future Development of NCSA DataScope

Developers within NCSA are targetting the following three enhancements for future versions of NCSA DataScope.

- The ability to read and write files that are not in NCSA HDF format.
- The capability to call user-written FORTRAN subroutines residing in Macintosh external libraries [you can call FORTRAN subroutines on remote hosts in this version (2.0).]
- The merging of the functionality of DataScope with other tools from the NCSA Scientific Visualization Software Suite into a supertool under C ++.