

PACKAGE ID - 000660CY00000 BASIS9.4

KWIC TITLE - The Basis Code Development System

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LIMITATION CODE -UNL **AUDIENCE CODE** - UNL

COMPLETION DATE - 08/01/1993 **PUBLICATION DATE** - 08/01/1993

DESCRIPTION - BASIS9.4 is a system for developing interactive computer programs in Fortran, with some support for C and C++ as well. Using BASIS9.4 you can create a program that has a sophisticated programming language as its user interface so that the user can set, calculate with, and plot, all the major variables in the program. The program author writes only the scientific part of the

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DESCRIPTION - (CONT) program; BASIS9.4 supplies an environment in which to exercise that scientific programming which includes an interactive language, an interpreter, graphics, terminal logs, error recovery, macros, saving and retrieving variables, formatted I/O, and online documentation.

PACKAGE CONTENTS - Software Abstract; Media Includes Source Code, User's Guide, Auxiliary Material, Compilation Instructions, Linking Instructions, Sample Problem Input, Programmer Documentation;

SOURCE CODE INCLUDED? - Yes

MEDIA QUANTITY - 1 CD Rom

METHOD OF SOLUTION - BASIS9.4 includes a full complement of elementary mathematical functions, vector and matrix syntax and operations, string processing primitives, graphical operators, and file I/O functions. These may be applied to internal program variables and arrays or to temporary variables created and processed interactively. Numerical functions operate on integer, real, double precision, or complex data types.

COMPUTER - CRAY

OPERATING SYSTEMS - Unicos

PROGRAMMING LANGUAGES - FORTRAN (with CRAY pointers 75%), C (25%)

SOFTWARE LIMITATIONS - Practical array sizes are usually limited by the amount of core memory available on a given machine.

SOURCE CODE AVAILABLE (Y/N) - Y

UNIQUE FEATURES - BASIS9.4 provides a uniform execution, production, and analysis environment for most physics and engineering code systems. It allows the user to rapidly construct new codes from existing, tested modules, and to interactively modify their input parameters and output processing methods. It allows unprecedented visibility and control of internal code variables and functions.

OTHER PROG/OPER SYS INFO - MPPL language input files normally use an extension of '.M'. CGM (Computer Graphics Metafiles) are usually named with the extension '.cgm'. BASIS9.4 'variable descriptor files' use a '.v' extension. A developer's license for the ATC GKS Graphics Library is recommended. The NCAR (National Center for Atmospheric Research) graphics system is required. The MIT X11 Windowing System (R4 or higher) is required. The Perl programming language, version 4.0 or higher, is required.

HARDWARE REQS - A color monitor for graphics presentation is recommended.

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HARDWARE REQS - (CONT)

TIME REQUIREMENTS - Normally limited by the time requirements of the underlying physics or engineering model calculations. BASIS9.4 codes can normally take advantage of all available compiler optimizations. A BASIS9.4 program is a combination of compiled and interpreted code. Interpreted code is considerably slower when compiled.

REFERENCES - Complete LaTeX documentation for the development and use of BASIS9.4 programs is provided on the media\ Documentation for the proprietary and public domain software mentioned under Other Information is available elsewhere.

ABSTRACT STATUS - Submitted March 10, 1994. Released AS-IS June 24, 1994.

SUBJECT CLASS CODE - P

KEYWORDS -

COMPUTER PROGRAM DOCUMENTATION
B CODES
PROGRAMMING
EXECUTIVE CODES
INTERACTIVE DISPLAY DEVICES
COMPUTER GRAPHICS
COMPUTERIZED SIMULATION
CRAY COMPUTERS
DATA ANALYSIS
FORTRAN
HP COMPUTERS
IBM COMPUTERS
MATRICES
PROGRAMMING LANGUAGES
TRANSLATORS
VECTORS

EDB SUBJECT CATEGORIES -
990200

SPONSOR - DOE/DP

PACKAGE TYPE - AS - IS