

Directory of Programming Interfaces for Customers

Release 3

$$\begin{aligned} \sinh 3x &= \sinh x(4 \cosh^2 x - 1) \\ \sinh 4x &= \sinh x \cosh x(8 \cosh^2 x - 4) \\ \sinh 5x &= \sinh x(1 - 12 \cosh^2 x + 16 \cosh^4 x) \\ \cosh 3x &= \cosh x(4 \cosh^2 x - 3) \\ \cosh 4x &= 1 - 8 \cosh^2 x + 8 \cosh^4 x \\ \cosh 5x &= \cosh x(5 - 20 \cosh^2 x + 16 \cosh^4 x) \end{aligned}$$

$$x = \frac{2y - b - a}{b - a}$$

$$f(1 + a^2)^{1/2}$$



VS FORTRAN Version 2

GC26-4520-0

**Directory of Programming
Interfaces for Customers**

Release 3

First Edition (February 1988)

This edition applies to Release 3 of VS FORTRAN Version 2, Program Numbers 5668-806 and 5668-805, and to any subsequent releases until otherwise indicated in new editions or technical newsletters.

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About This Book

This book is a directory of interfaces provided by VS FORTRAN Version 2 Release 3 (5668-806 and 5668-805), hereafter referred to as VS FORTRAN Version 2, for use by customers in writing programs.

Who Might Use This Book

You should read this book if you are:

1. An application programmer or systems programmer who writes programs that will invoke the services or functions provided by VS FORTRAN Version 2, or
2. A systems programmer who may wish to utilize "product-sensitive" interfaces provided by VS FORTRAN Version 2.

What Does This Book Contain?

This book is a directory to other books, or sections of books, that contain the detailed descriptions of programming interfaces.

This book provides a directory of all programming interfaces provided by VS FORTRAN Version 2 for use by customers. It also identifies and specifies limitations on the use of certain "product-sensitive" interfaces, which are dependent on the detailed design and implementation of VS FORTRAN Version 2.

No information other than that identified in this directory should be construed as defining a programming interface.

Other Books in the VS FORTRAN Version 2 Library

The following table lists the VS FORTRAN Version 2 publications and the tasks they support.

Task	VS FORTRAN Version 2 Publications	Order Numbers
Evaluation and Planning	General Information	GC46-4219-4
	Licensed Program Specifications	GC26-4225-3
Installation and Customization	Installation and Customization for VM	SC26-4339-1
	Installation and Customization for MVS	SC26-4340-1
Application Programming	Language and Library Reference	SC26-4221-3
	Programming Guide	SC26-4222-3
	Interactive Debug Guide and Reference	SC26-4223-2
	Reference Summary	SX26-3751-3
Diagnosis	Diagnosis Guide	LY27-9516-1

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Chapter 1. Programming Interfaces

Programming Interfaces for VS FORTRAN Version 2 are those interfaces provided by VS FORTRAN Version 2 by which a customer-written program is to request or receive functions or services of VS FORTRAN Version 2. This section lists where in the VS FORTRAN Version 2 books the programming interfaces for VS FORTRAN Version 2 are described.

Dependence on specified values of syntactical limits (for example, maximum statement lengths and the number of continuation lines allowed) associated with programming interfaces should be avoided; such limits are product-sensitive and subject to change. Guidance information, such as examples, tutorials, and references to other books in the library, are not considered programming interfaces.

Language Elements

Book	Chapter	Section or Heading	Pages	Comment
Language Reference	1	Language	3	
	1	Valid and Invalid Programs	3	
	1	Language Definitions	3-4	
	1	Language Syntax	4	
	1	Input Records	4-5	
	1	Names	7-8	
	1	Source Language Statements	8-11	
	1	Comments	12-13	
	1	Statement Labels	13	
	1	Keywords	13	

Data Elements

Book	Chapter	Section or Heading	Pages	Comment
Language Reference	2	Constants	15	
	2	Arithmetic Constants	15	
	2	Integer Constants	15-16	
	2	Real Constants	16-18	
	2	Complex Constants	18-19	
	2	Logical constants	19	
	2	Character Constants	19-20	
	2	Hollerith Constants	20	
	2	Hexidecimal Constants	20-21	
	2	Variables	22-24	
	2	Array	24-27	
	2	Character Substrings	28-29	

Expressions

Book	Chapter	Section or Heading	Pages	Comment
Language Reference	3	Expressions	31-44	

General Statements

Book	Chapter	Section or Heading	Pages	Comment
Language Reference	4	Statements	45	
	4	Statement Categories	45	
	4	Specification Statements	48	
	4	Subprogram Statements	48	
	4	ASSIGN	45 51-52	
	4	Assignment Statements	52-56	
	4	BLOCK DATA	59-60	
	4	Comments	66	
	4	COMMON	66-68	
	4	DATA	46 69-70	
	4	DIMENSION	76	
	4	ENTRY	86-89	
	4	EQUIVALENCE	89-90	
	4	Explicit Type	91-95	
	4	EXTERNAL	95	
	4	FUNCTION	120-124	
	4	IMPLICIT	133-134	
	4	INTRINSIC	147-148	
	4	PARAMETER	158-159	
	4	PROGRAM	48 162	
	4	SAVE	203-204	Excluding second paragraph under heading
	4	Statement Function	204-206	
	4	Statement Labels	207	
4	SUBROUTINE	208-212		
4	WAIT	214-215		

Input/Output Statements

Book	Chapter	Section or Heading	Pages	Comment
Language Reference	4	Input/Output Statements	46-47	
	4	BACKSPACE	57-58	
	4	CLOSE ¹	64-65	
	4	DELETE ¹	75	
	4	ENDFILE ¹	85-86	
	4	FORMAT	98-120	
	4	INQUIRE ¹	138-147	Excluding system-dependent information under bullets <i>On VM</i> and <i>On MVS</i> , p. 137
	4	NAMelist	148-150	
	4	OPEN ¹	151-157	Excluding system-dependent information under bullets <i>On VM</i> and <i>On MVS</i> , p. 152-153
	4	PRINT	160-162	
	4	READ 1,2,3	163-195	
	4	REWIND ¹	198-199	
	4	REWRITE ²	199-203	
	4	WRITE ²	216-242	

Control Statements

Book	Chapter	Section or Heading	Pages	Comment
Language Reference	4	Control Statements	45	
	4	CALL	60-63	
	4	CONTINUE	68	
	4	DO	77-82	
	4	DO WHILE	82	
	4	END	83-84	
	4	END DO	84	
	4	GO TO	125-127	
	4	IF/ELSE	127-132	
	4	PAUSE	159	
	4	RETURN	196-197	
	4	STOP	207	Excluding system-dependent information

¹ Excluding VSAM related information.

² Excluding information regarding the extended error handling facility.

³ Excluding information regarding message AFB2171.

Program Organization

Book	Chapter	Section or Heading	Pages	Comment
Language Reference	4	Order of Statements in a Program Unit	49-50	

Functions

Any discussion of how code for the intrinsic function is generated and what libraries are involved are not part of programming interfaces.

Book	Chapter	Section or Heading	Pages	Comment
Language Reference	5	Intrinsic Functions	243-260	Excluding <i>Function Value Type and Range</i> , p. 244-245

Chapter 2. Product-Sensitive Programming Interfaces

Product-sensitive interfaces are dependent on the detailed design or implementation of VS FORTRAN Version 2. Because of their dependencies on detailed design and implementation, it is to be expected that programs written to such interfaces may need to be changed in order to run with new VS FORTRAN Version 2 releases or versions, or as a result of maintenance. This section lists the “product-sensitive” interfaces provided by VS FORTRAN Version 2.

Assembler Program Communication

Book	Chapter	Section or Heading	Pages	Comment
Programming Guide	App.A	Assembler Language Considerations	319-329	

Extended Error Handling Codes

Book	Chapter	Section or Heading	Pages	Comment
Language Reference	6	Figures 27-29 Figures 31-32	248-324 256-257	Error code column only.
Language Reference	9	Figure 52-55	324-333	

Compiler Syntactical Limits

Book	Chapter	Section or Heading	Pages	Comment
Programming Guide	App.D	Internal Limits in VS FORTRAN Version 2	347	

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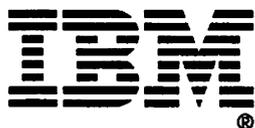
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