Datasheet
Fujitsu Software BS2000
FOR1 V2.2

The BS2000 FORTRAN77 compiler FOR1 is a powerful development system for developing productive applications using the FORTRAN programming language.

Topics

Product characteristic

The language set for FOR1 conforms to the following standards: ANSI X3.9-1978, DIN 66027-1980 and ISO 1539-1980. In order to support efficient program development, FOR1 offers a language set extended beyond the standard language set of FORTRAN77.
FOR1 has powerful optimization functions at its disposal and offers a high degree of ease of use and testing.
The compiler creates objects executable in XS addressing mode. It is shareable and generates shareable objects, when required.
FOR1 is suitable both for solving individual problems and for putting large program systems into practice.
FOR1 supports the interactive symbolic debugging aid AID (Advanced Interactive Debugger).
FOR1 object modules created by the FOR1 compiler must be converted to executable load modules by being linked to the FOR1 runtime system FOR1-LZS. FOR1-LZS must be available on all systems on which programs compiled with FOR1 are to run.

FOR1 has been validated as being error-free and in accordance with DIN 66027-1980, ANSI X3.9-1978 and ISO 1539-1980.

Functional description

Language set:
In addition to the FORTRAN77 language set, a number of extensions are provided, which support productive program development.
These include:

- additional elementary data types:
  dynamic fields, CHARACTER of variable length, REAL with a length of 16 bytes, COMPLEX with a length of 32 bytes, INTEGER with a length of 1, 2, or 8 bytes and LOGICAL with a length of 1 byte.
- compilable comment lines for supporting debugging

- insertion of previously prepared program sections using a text substitution function (%INCLUDE statement)
- additional statements for positioning within external files
- hexadecimal and Hollerith constants
- a wide range of additional INTRINSIC functions
- INTRINSIC functions with generic function names
- input/output controlled by NAMELIST
- identifiers of lengths up to 15 characters
- transfer of parameters to subprograms by transferring addresses
- unrestricted input format for source code (independent of column structure)
- support for index sequential files
- end-of-line comments
- specific debugging aid statements
- Stream input/output

Program description

The FOR1 system comprises the following:
- FOR1 compiler with runtime system (FOR1) and
- FOR1 runtime system (FOR1-LZS).

Operation:
Operator intervention for regular applications is kept to a minimum. For complex professional applications, a wide range of parameters and options are available:
- connection of PLAM program libraries
- extensive source, cross-reference and attribute listings, object listings with notes on the source program and symbolic address references
- menu-driven operation via SDF
- choice between German and English as the output language for messages

Diagnosis and debugging aids:
FOR1 provides special facilities supporting the preparation and debugging of programs. These include:
- source input with interactive syntactic checks and interactive correction options
- detailed tests and analyses
- clear-cut messages controllable by options
- large range of integrated debugging aids in the form of debug options and debug statements
- connection to AID (Advanced Interactive Debugger)
- output of the execution frequency and timing of the individual program units

Optimization:
The optimization of the FOR1 compiler system is tailored to speeding up the execution of object programs:
- evaluation of constant expressions at compile time
- usage of common subexpressions
- loop optimization, in particular, by placing before the loop all calculations which do not vary during the course of the loop
- subtle register allocation and statement resolution.

FOR1 runtime system (FOR1-LZS):
The FOR1 runtime system executes the I/O operations, performs error handling, and makes prefabricated functions and subroutines available to the user.
Program management controls the execution of programs and initializes and terminates programs. Program management includes error handling routines and routines for the dynamic management of the available memory area.
The prefabricated functions comprise the standard modules for mathematical functions and routines for the processing of character strings. In addition to these functions a series of prefabricated subroutines, for debugging purposes and for accessing functions of the operating system, are available.
The FOR1 runtime system is shareable and can be loaded into Class 4 or Class 6 memory by the system administrator using DSSM. It must be available on all systems on which programs compiled with FOR1 are to run.

Technical Details

Requirements	
Technical Requirements Hardware	BS2000 Business Server
Technical Requirements Software	BS2000 OS DX V1.0 BS2000 OSD/BC V11.0, OSD/XC V11.0
User Requirements	Knowledge of FORTRAN and BS2000
Installation	
Operating Mode	Batch and interactive mode
Implementation Language	SPL4 and Assembler
User Interface	Commands English Messages texts available in either English or German
Installation	Please refer to the relevant release notices.
Documentation and Training	
Documentation	The manuals for FOR1 are available on the manual server.
Training	See course offer (German only)
Purchase and Delivery	
Conditions	This software product is provided to customers under the terms and conditions for the use of software products in return for ongoing or one-time payment.
Order and Delivery	This software product may be obtained from your local Fujitsu regional office.

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