Data Sheet

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FUJITSU COMPUTERS SIEMENS

COBOL85 (BS2000/OSD) Version 2.3

Issue October 2004

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COBOL85 is the COBOL compiler, providing support for the current ANSI/ISO COBOL Standard, open interfaces conforming to X/Open, and future standards for the server lines running BS2000/OSD.
COBOL (COmmon Business Oriented Language) is a high-level, problem-oriented programming language which is based on natural English. COBOL is by far the most widely used programming language for commercial data processing solutions.
The strength of COBOL lies in the efficiency with which it manipulates and processes large volumes of business-critical data. COBOL is the programming language of the professional programmer.
The functionality of COBOL85 conforms to the American National Standard X3.23-1985 with Addendum X3.23a-1989, the international standard ISO 1989-1985 with Amendment 1:1992, the German standard DIN 66028-1986 and the European standard EN 21989.
COBOL85 has been validated as compliant with the above standard and has the official conformity certificates to that effect.
UNIX extensions:
COBOL85 supports the POSIX functionality and the POSIX file system in BS2000/OSD V2.0 or higher.

The COBOL85 compiler is available in the following selectable units:

- COBOL85 full configuration:
- Compiler without runtime system
- with /390 code generator
- with AID support
- with POSIX/XPG4 support
- with structurizer
- with UDS-DML
- with Report Writer

COBOL85-BC basic configuration:
Compiler without runtime system

- with /390 code generator
- without AID support
- without POSIX/XPG4 support
- without structurizer
- without UDS-DML
- without Report Writer

CRTE is the common runtime environment for COBOL85 and C/C++. CRTE V2.1 is a software prerequisite for using the COBOL85 compilers and for running COBOL85 V2.3 applications.
CRTE is not supplied with the COBOL85 compiler and must be ordered separately. CRTE V2.1 is included in OSD-SVP V2.0 for SR2000 business servers.
COBOL85 supports the symbolic debugging of COBOL programs with the interactive debugging tool AID (not with COBOL85-BC).

Functional Description
In order to describe the COBOL language, the current standard documents divide it into a nucleus and eleven functional modules, of which five are optional.
COBOL85 V2.3 supports the following levels:

Nucleus	2	NUC	1,2
Sequential I-O	2	SEQ	1,2
Relative I-O	2	REL	0,2
Indexed I-O	2	INX	0,2
Inter-Program Communication	2	IPC	1,2
Sort Merge	1	SRT	0,1
Source Text Manipulation	2	STM	0,2
Optional modules:			
Report Writer	1	RPW	0,1
Segmentation	2	SEG	0,2
Intrinsic Function			

The remaining optional modules, Communication and Debug, are covered in BS2000/OSD by openUTM and AID respectively.
POSIX support:
COBOL85 supports the POSIX functionality and the POSIX file system in BS2000/OSD.
FIPS flagging with COBOL85:
Certain language elements and different language levels can be identified in the COBOL programs by means of flags.
COBOL85 structurizer:
The COBOL85 source text can be formatted into a clearer structure using the Beautifier and edited with graphical structure lists and cross-references by means of a Pretty Printer.

COBOL DML:
The COBOL DML (Data Manipulation Language) enables statements in COBOL programs to be integrated into the UDS/SQL database system.
ESQL-COBOL:
The ESQL-COBOL preprocessor implements the COBOL program interface to the UDS/SQL and SESAM/SQL database systems via embedded SQL. This enables SQL functions to be called directly from COBOL programs (separate software product).

Year 2000 support:
COBOL85 supports Year 2000 conversions with extended programming interfaces with four-digit year formats:
With the ACCEPT statement DATE-ISO4 a 4-digit century date function in the form YYYY-MM-DDNNN.
With COBOL Intrinsic Functions: CURRENT-DATE,
DATE-OF-INTEGER,
DAY-OF-INTEGER,
NTEGER-OF-DATE,
INTEGER-OF-DAY and
WHEN-COMPILED.
With COBOL standard functions DATE-TO-YYYYMMDD,
DAY-TO-YYYYDDD and
YEAR-TO-YYYY using the sliding windows technique to expand two-digit years into four-digit format by means of a sliding century window.
With the COBOL SORT/MERGE statement with sliding window technique.

Program Description
The COBOL85 development system is a combination of the COBOL85 compiler and the Common Runtime Environment CRTE. CRTE is the common runtime environment for COBOL85 and C/C++.

The COBOL source program can be input to the COBOL85 compiler via files assigned to SYSDTA, via program libraries (PLAM) or from the POSIX file system. The output generated by the compiler is an object module and compiler listings. The object modules are output to the temporary object module file (OMF), to program libraries (PLAM) or to the POSIX file system. The object modules from one or more independent compilation runs must be linked together with CRTE to form a load module.
When generating /390 format,
object compatibility of BS2000/OSD applications is granted also for coming changes of architecture.
The compilation is controlled via the SDF interface, the COMOPT control facility or from the POSIX shell. Error texts are output in English or German (user option).

The syntax and semantics of a COBOL program can be checked by starting a compiler run without code generation.
The objects generated by COBOL85 are reusable. This saves on storage space and reduces the number of load calls.
The objects generated by COBOL85 can be run above the 16 MB boundary.
COBOL85 applications can make use of an address space of max. 2 Gbytes (data, modules, Level 01).
A COBOL program can process files based on different organization schemes. The form of organization selected by the user determines the access method used by the BS2000/OSD DMS or the POSIX file system. BS2000/OSD and POSIX files can be accessed simultaneously in a COBOL program.
POSIX extensions:
COBOL85 V2.2 and higher additionally supports POSIX and XPG4 interfaces. These permit the COBOL85 compiler and COBOL85 applications to be called from the POSIX shell and programs and data to be stored in the POSIX file system.
XPG4 extensions:
ACCEPT and DISPLAY can be used for environment variable and command line processing.
CALL BY VALUE and RETURN CODE can be used to communicate with C/C++ programs.
Linking with other COBOL85 programs and with C/C++, Fortran, Pascal, PL/I, RPG3 and Assembler programs is possible via the common run-time environment CRTE.
Communication with other COBOL85 programs and with the operating system is supported by means of user and task switches, job variables, command line parameters and shell variables.
COBOL85 also generates symbol information to allow symbolic interactive debugging using AID.

Technical Requirements

Hardware
Business server with /390 architecture
Business server with RISC architecture (SR2000)
Software
BS2000/OSD-BC V1.0 or higher
OSD-SVP V2.0
CRTE V2.1
Optional software:
AID for symbolic debugging
TomDoors-M as BS2000/OSD development environment
Desk2000 as Windows PC development environment
POSIX-BC for the COBOL85 compiler under POSIX
Operating mode
Batch and interactive
Implementation language
C/C++, COBOL and Assembler
User interface
Commands (English)
Messages in English or German (optional)
Installation
Refer to the relevant release notices.
Documentation
Documentation in German and English:
Language reference manual for COBOL85
User guide for the COBOL85 Compiler
Ready reference for COBOL85
User guide for CRTE
User guide on debugging with AID for COBOL85
Demands on the user
Knowledge of the COBOL programming language and BS2000/OSD
Training
See course offer at:
http://www.fujitsu-siemens.com/training
Conditions
This software product is supplied to the customer against a single payment or installments in accordance with our conditions for the use of software products.
Warranty
Class: A
Delivery format: Machine language
Ordering and delivery
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