

# DATA SHEET

## COBOL85 (BS2000/OSD) Version 2.3

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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.**

### Product Characteristic

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 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).

## 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.

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## TECHNICAL DETAILS

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### COBOL85 (BS2000/OSD) V2.3

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#### Technical Requirements

##### Hardware

BS2000/OSD Business Server

##### Technical Requirements

##### Software

BS2000/OSD-BC V1.0 or higher

CRTE V2.1 or higher

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

The documentation is available as online manuals, see <http://manuals.ts.fujitsu.com/mainframes.html>, or in printed form which must be paid for and ordered separately at <http://manuals.ts.fujitsu.com>.

##### User Requirements

Knowledge of the COBOL programming language and BS2000/OSD

##### Training

See course offer at:

<http://training-mediaserver.ts.fujitsu.com/elearningmedia/catalog>

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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.

##### Delivery format:

Machine language

##### Ordering and delivery

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