



# Software Product Description

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**PRODUCT NAME: DECSYSTEM-20 COBOL-68, Version 12, ANS-68 COBOL Compiler with SORT/MERGE, Version 4**

**SPD 21.7.3**

## **DESCRIPTION:**

The DECSYSTEM-20 COBOL compiler is an implementation of the COBOL language based on the ANS COBOL X3.23-1968 specification. It is designed to work in a batch or interactive environment. In a batch environment, series of compilations, program loading and execution directions and data can be submitted for processing, leaving the user free to do other work while the batch job is running. COBOL-68 provides an interactive debugging facility. The user is able to follow the progress of the program by causing the program to pause at any desired step during execution. The user can then examine and modify the data before continuing execution. The user can also modify the source program stored on disk, recompile and begin execution again. Listings produced by the compiler contain many documentation and debugging aids. English diagnostic messages are imbedded in the source listing at the point of error. In addition, the listing can also include at the user's discretion, a complete map of the object program, and an easy-to-read listing of the compiled code. The latter is presented in the form used by MACRO, the DECSYSTEM-20 assembly language translator. All object code is expanded to list the machine mnemonics and user defined names in addition to the binary machine code (in octal). An implementation of the COBOL SORT and REPORT WRITER statements is provided.

A complete ISAM (indexed sequential access method) package is included in the COBOL object time system. This package allows the user to sequentially or randomly access data stored on a random access device. The time required to access a file is not affected by the number of additions made to the file. The technique of "chaining" records is not used. Instead the index to the file is updated to minimize the number of accesses necessary to retrieve records.

### *On-line Debugger:*

The on-line debugging package permits user interaction during the execution of a program. No changes to a source program are necessary to use the facilities of the package. If the user desires to use this facility, it is loaded with the object program when execution starts. The user can specify points within the program at which to pause during execution.

During these pauses, the user can examine the contents of any data fields to check the progress of the program, and, if desired, alter those contents before proceeding.

All references to data and procedure items are made by using the name in the source program. The user talks to the debugging package using familiar names than truncated or substituted names.

### *RERUN:*

The RERUN feature allows the user to save the status of a job periodically. In the event of later disruption the job can be restarted from the point of the last status save, instead of starting again from the beginning.

### *Subroutines:*

COBOL may call subroutines written in COBOL, FORTRAN or MACRO.

SORT/MERGE is a disk sort utility for the DECSYSTEM-20 which operates stand-alone or in configuration with COBOL-68. SORT/MERGE reorders the records of:

- ASCII files
- SIXBIT files
- EBCDIC files
- Binary files produced by COBOL or FORTRAN

in a sequence determined by the sorting parameters prepared by the user.

SORT/MERGE automatically controls the use and allocation of disk work space and memory work space. The user can also specify memory limits.

SORT/MERGE provides error diagnostics and statistics upon completion.

The MERGE capability permits the merging of sorted files into a single sorted file. This function can be invoked either in the stand-alone use of SORT/MERGE or via the COBOL MERGE verb.

### **MINIMUM HARDWARE REQUIRED:**

DECSYSTEM-20 with 128K words of memory.

### **OPTIONAL HARDWARE SUPPORTED:**

Supports any device supported by TOPS-20 System Software.

### **PREREQUISITE SOFTWARE:**

TOPS-20 System Software, Version 1 or later

### **OPTIONAL SOFTWARE SUPPORTED:**

DBMS-20, Version 4 or later

### **TRAINING CREDITS:**

None

**SUPPORT CATEGORY:**

B — Software Support will be provided as stated in the Software Support Categories Addendum to this SPD.

**UPDATE POLICY:**

Software Updates, if any, released by DIGITAL during the one (1) year period following installation, will be provided to the customer without additional charge (includes no installation). After the first year, updates, if any, will be made available according to then prevailing DIGITAL policies.

**ORDERING INFORMATION:**

All binary licensed software, including any subsequent updates, is furnished under the licensing provisions of DIGITAL's Standard Terms and Conditions of Sale, which provide in part that the software and any part thereof may be used on only the single CPU on which the software is first installed, and may be copied, in whole or in part (with the proper inclusion of the DIGITAL copyright notice and any DIGITAL proprietary notices on the software) only for use on such CPU. All source licensed software is furnished only under the terms and conditions of a separate Software Program Sources Agreement between Purchaser and DIGITAL.

The following key (M) represents the distribution media for the product and must be specified at the end of the order number, e.g., QT003-AM = binaries 9-track magnetic tape..

M = 1600 bpi 9-track Magnetic Tape

*Standard Options*

*For COBOL:*

QT003 -A— Single-use license, binaries, documentation, support services (media: M)

QT003 -U— Armed services procurement regulation license binaries, documentation, support services (media:M)

*For COBOL and SORT/MERGE:*

QT011 -A— Single-use license, binaries, documentation, support services (media: M)

QT011 -U— Armed services procurement regulation license binaries, documentation, support services (media:M)

**ADDITIONAL SERVICES:**

*For COBOL:*

QT003 -3— Maintenance Service (media: M)

QT003 -Z— Armed services procurement regulation maintenance service (media: M)

*For COBOL and SORT/MERGE:*

QT011 -3— Maintenance Service (media: M)

QT011 -Z— Armed services procurement regulation maintenance service (media: M)

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ADDENDUM  
SOFTWARE SUPPORT CATEGORIES

Each software product (hereinafter 'SOFTWARE') with a designated Support Category A or B in the applicable Software Product Description (SPD) existing at the time of order will be the current release at the time of delivery and will conform to the SPD. DIGITAL's sole obligation shall be to correct defects (nonconformance of the SOFTWARE to the SPD) as described below. Any SOFTWARE with a designated Support Category C will be furnished on an 'as is' basis.

For SOFTWARE with a designated Support Category A or B, DIGITAL will provide the services set forth below without additional charge.

## CATEGORY A

1. Upon notification by customer to the nearest DIGITAL office that the computer system, including all required prerequisite hardware and software, is ready for the installation of the SOFTWARE, DIGITAL will install such SOFTWARE in any location within the contiguous forty-eight (48) United States, the District of Columbia, or a country in which DIGITAL or a subsidiary of DIGITAL has a software service facility. The notification must be received by DIGITAL and the system must be ready for installation within thirty (30) days after the delivery of the SOFTWARE to customer or DIGITAL will have no obligation to install. Installation will consist of: (1) verification that all components of the SOFTWARE have been received by customer, (2) loading the SOFTWARE, and (3) executing a DIGITAL sample procedure.
2. During the ninety (90) day period after installation, if the customer encounters a problem with the current unaltered release of the SOFTWARE which DIGITAL determines to be a defect in the SOFTWARE, DIGITAL will provide the following remedial service (on site where necessary): (1) if the SOFTWARE is inoperable, apply a temporary correction (TC) or make a reasonable attempt to develop an emergency by-pass, and (2) assist the customer to prepare a Software Performance Report (SPR) and submit it to DIGITAL.
3. During the one (1) year period following installation, if the customer encounters a problem with the SOFTWARE which his diagnosis indicates is caused by a SOFTWARE defect, the customer may submit an SPR to DIGITAL. DIGITAL will respond to problems reported in SPRs which are caused by defects in the current unaltered release of the SOFTWARE via the Maintenance Periodical for the SOFTWARE, which reports SPRs received, code corrections, temporary corrections, generally useful emergency by-passes and/or notice of the availability of corrected code. Software Updates, if any, released by DIGITAL during the one (1) year period, will be provided to the customer on DIGITAL's standard distribution media as specified in the applicable SPD. The customer will be charged only for the media on which such updates are provided, unless otherwise stated in the applicable SPD, at DIGITAL's then current media prices.

## CATEGORY B

During the one (1) year period following delivery, the services provided to the customer will be the same as set forth in 3 above.

## CATEGORY C

SOFTWARE is provided on an 'as is' basis. Any software services, if available, will be provided at the then current charges.

DIGITAL shall have the right to make additional charges for any additional effort required to provide services resulting from customer use of other than current unaltered release of the SOFTWARE operated in accordance with the SPD.