

# Software Product Description

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**PRODUCT NAME: CORAL 66, Version 3**

**SPD 14.56.5**

## **DESCRIPTION:**

CORAL 66 is a high-level block-structured programming language. It is the standard general purpose language prescribed by the British Government for real time and process control applications. It is defined in the "Official Definition of CORAL 66" (OD) published in 1973 by Her Majesty's Stationery Office (ISBN 0 11 470221 7).

The language is designed to replace assembly level programming in modern industrial and commercial applications. It is used for long life products where easy maintenance and flexibility are required.

The PDP-11 CORAL 66 compiler is implemented in accordance with the OD. It operates under the RSX-11M, RSX-11D, and IAS operating systems. In addition, the compiler provides the following features:

- BYTE, LONG (32-bit integer) and DOUBLE (64-bit floating point) numeric types.
- Generation of re-entrant code at the procedure level.
- Generated code executable on any valid RSX-11S operating system that includes the Extended Instruction Set (EIS).
- Switchable option to select target PDP-11 computer instruction sets.
- Switchable option to optimize generated code.
- Switchable option to check the bounds of array type variables.
- Conditional compilation of defined parts of source code.
- English language error messages at compile and (optionally) run-time.
- Switchable option to control listing output.
- INCLUDE keyword to incorporate CORAL 66 source code from user-defined files.
- Switchable option to read card format.

### *Floating Point Processor (FPP) Support*

The CORAL 66 with FPP support generates code that supports the FP11 Floating Point Processor Option of the PDP-11 computer system. The FP11 is available on several PDP-11 series computers to provide special support for floating point and integer arithmetic.

### *Object Time System*

The PDP-11 CORAL 66 Object Time System (OTS) is a set of object modules selectively linked with compiler-produced object modules by the operating sys-

tem's Task Builder to produce a task (program) ready for execution. The OTS is re-entrant and part or all of the OTS can be made into a shared library for concurrent use by the multiple tasks.

The PDP-11 CORAL 66 OTS provides the following capabilities:

- control of task execution
- control of task status
- system information functions
- event processing
- trap processing
- handler interface processing through QIO
- intertask communication processing
- stream, record and block INPUT/OUTPUT using FCP
- terminal interface handling
- mathematical functions

The OTS permits the user to generate an executable task to run under the RSX-11M, RSX-11S, or IAS operating systems, or a free-standing program to run on any PDP-11 without an operating system. The OTS free-standing programs provide the following capabilities:

- Bootable device module support for
  1. PC11 Paper tape reader
  2. RX11 Floppy disk
  3. RK11 Disk driver
  4. PC11 DECTape
- DL11 Downline load support
- Terminal interface handlers
- Stream input/output

### **MINIMUM HARDWARE REQUIRED:**

Any valid RSX-11M, RSX-11D, or IAS operating system configuration which includes:

- KT11 Memory Management Unit (or equivalent)
- KE11-E Extended Instruction Set (or equivalent)
- A 9-track magnetic tape system, an RK11 disk cartridge system, or an RK611 disk cartridge system
- A 24K-word (RSX-11M, RSX-11D and IAS) main memory partition

### **OPTIONAL HARDWARE:**

Supports any mass storage, unit record or terminal device supported by the prerequisite software.

-2-

**PREREQUISITE SOFTWARE:**

One of the following operating systems:

- RSX-11M, Version 3 or Version 3.1
- RSX-11D, Version 6B or Version 6.2
- IAS, Version 2

**OPTIONAL SOFTWARE:**

None

**TRAINING CREDITS:**

None

**SUPPORT CATEGORY:**

A — 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.

Standard options with no support services are only available after the purchase of one supported license. When a software license is ordered without support services, the category of support applicable to such software is Category C.

A single-use license only option is a license to copy the software previously obtained under license, and use such software in accordance with DIGITAL's Standard Terms and Conditions of Sale. The category of support applicable to such copied software is Category C.

Source and/or listing options are only available after the purchase of at least one supported license and after a source license agreement is in effect.

The following key (D, E, T, Z) represents the distribution media for the product and must be specified at the end of the order number, e.g., QP066-AD = binaries on 9-track magnetic tape.

- D = 9-track Magnetic Tape
- E = RK05 Disk Cartridge
- T = RK06 Disk Cartridge
- Z = No hardware dependency

*Standard Options***CORAL 66 COMPILER**

QP066 -A— Single-use license, binaries, documentation, support services (media: D, E, T)

QP066 -C— Single-use license, binaries, documentation, no support services (media: D, E, T)

QP066 -D— Single-use license only, no binaries, no documentation, no support services (media: Z)

**CORAL 66 OBJECT TIME SYSTEM**

QP069 -C— Single-use license, binaries, documentation, no support services (media: D)

QP069 -D— Single-use license only, no binaries, no documentation, no support services (media: Z)

*Source/Listing Options***CORAL 66 OBJECT TIME SYSTEM SOURCES**

QP069 -E— All sources (media: D)

**CORAL 66 COMPILER SOURCES**

QP071 -E— All sources (media: D)

*Update Options*

Users of CORAL 66, Version 2.0, whose specified Support Category warranty has expired may order the following software update at the then current charge for such update, for use under the existing license. Except where the media is designated as Z, the update is distributed in source or binary form on the appropriate medium. A software update where the media is designated as Z grants the user of CORAL 66, Version 2.0, the right to copy the previously ordered QP066-H (D, E, T) or QP066-W (D, E, T) software update for use on an additional single CPU for which a CORAL 66 license has been obtained.

QP066 -H— Binaries, documentation (media: D, E, T)

QP066 -H— Right to copy for single-use (under existing license), no binaries, no documentation, no support services (media: Z)

Users of CORAL 66, Version 2.0, whose specified Support Category warranty has not expired may order the following software update for the then current media charge for use under the existing license. The update is distributed in binary form on the appropriate medium and includes no installation or other services unless specifically stated otherwise.

QP066 -W— Binaries, documentation (media: D, E, T)

**ADDITIONAL SERVICES:**

None

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.