Programming Announcement

7090/7094 IBSYS Operating System

Significant new features are planned for Version 13 of the IBSYS Operating System -- availability December, 1964. They include:

... New FORTRAN IV Compiler
... Improvements to IBJOB Processor components, including a FORTRAN IV Alternate Input/Output Package
... Assembly of IBSYS Systems using the Macro Assembly Program

FORTRAN IV Compiler ...

A new FORTRAN IV Compiler is being developed as a replacement version of IBFTC. Operating within the same system environment as does the current version, it will include three new language features:

A maximum of seven dimensions for arrays
Nonstandard returns from subroutines
Multiple entry points to a subprogram

In addition, significant performance improvements will be effected. A full description of this new compiler was released in P64-36, February 28, 1964.

Improvements to IBJOB Components ...

Subroutine Library (IBLIB): A FORTRAN IV alternate input/output package will be included in the Subroutine Library to coordinate binary and BCD input/output operations for FORTRAN IV programs when using 729 Magnetic Tape Units only. Since Input/Output Control System (IOCS) subroutines are no longer used for buffering and transmission, the amount of core storage available to object programs is increased.

The method for conversion of BCD data to binary for FORTRAN IV object programs has been changed so that the binary representation of data read into the object program will be identical to that of data compiled into the object program. Also, this method will increase the accuracy of the binary representation.

New output techniques and a new method of converting binary and octal data to BCD will be used. The new method will improve the speed of conversion for the 7094.

The Loader (IBLDR): There will be approximately 2300 additional locations for storage of the Control Dictionary entries at load time to permit more extensive cross-referencing in the object program.
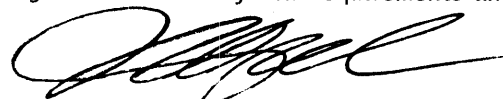
The load map facility will be expanded. This customer-developed feature will eliminate, in most cases, the need for a LOGIC print-out. In addition to listing deck names and deck locations, the new load map will specify the location and status of all real control sections within the deck.

The COBOL Compiler (IBCBC): The clauses APPLY CHECK-SUM and APPLY SEQUENCE-CHECK for checksum and block sequence checking will be implemented. The RERUN clause will be extended to allow the INPUT FILES, OUTPUT FILES, and ALL FILES options.

Linkage subroutines will allow the use of routines in the FORTRAN mathematics library via CALL statements.

The DISPLAY verb will be modified to allow: Display of variable length items ... Display of item(s) of greater than 72 characters total length on-line without truncation ... Line length of up to 120 characters for off-line DISPLAY statements ... Formatting of print lines to prevent the splitting of numeric items between lines.

Improvements are continued on the reverse side along with minimum system requirements and publications.

J. R. Opel
Vice President - Marketing

The Macro Assembly Program (IBMAP): The LOC pseudo-operation will be added to permit symbolic addressing in segments of the object program that are to be loaded at one location and then moved to and executed from another.

Options will be added to the $IBMAP control card to permit the use of the System Symbol Table in an absolute assembly.

The LITORG pseudo-operation will be added to permit the use of more than one Literal Pool.

System Assembly by IBMAP ...

The System Monitor (IBSYS), all components of the IBJOB Processor, the Restart Program, the Utility Package, and the Symbolic Update Program will be assembled by the Macro Assembly Program (IBMAP). None of the components will be altered functionally by the conversion to MAP.

A new subsystem, the Symbolic Update Program, operating under the System Monitor, will be added for updating symbolic input tapes. Since it will be adapted from the FORTRAN Assembly Program, decks that were prepared for the FAP Update Program's update-only mode may be used with the Symbolic Update Program.

Minimum system requirements ...

Unchanged.

Publications ...

IBM 7090/7094 FORTRAN IV Compiler (IBFTC) Replacement: Specifications and Language Additions, C28-6376-0.

IBM 7090/7094 FORTRAN IV Compiler: Specifications for Alternate Input/Output Package, C28-6385-0.

IBM 7090/7094 IBSYS Operating System: Symbolic Update Program, Preliminary Specifications, C28-6386-0.*

*Availability will be announced through
the Publication Release Letter.