



7030 DATA PROCESSING SYSTEM BULLETIN

IBM 7030 MINIMUM CONFIGURATION

The minimum Input/Output and Core Storage requirements for the IBM 7030 Data Processing System under the MCP are as follows:

1. An IBM 1401 Magnetic Tape System is used for off-line operations.
2. Since the programming system requires 24K words of core storage, it fits comfortably in the minimum available complement of 32,384 words.
3. An IBM 7612 Disk Synchronizer with at least one IBM 7302 Disk Storage Unit is used to store system programs, object programs produced by system programs and as auxiliary storage for problem programs.
4. An IBM 7619 Exchange with the minimum eight basic exchange channels is used as follows:
 - (a) An IBM 7152 Operator's Console is used by the operator to issue and receive commands controlling MCP. This unit may also be used by the problem programmer to control his own program.
 - (b) An IBM 7503 Card Reader is used by the Spool subroutine to read in problem programs and MCP commands while it is in either the On-Line Overlapped or Bypass mode of operation. While MCP is in the Off-Line Overlapped mode, the card reader may be used by the problem program.
 - (c) At least one but preferably three tape control units with a total of four IBM 729 Model IV Magnetic Tape Units are used as follows:
 - (i) The Spool Output tape contains information to be printed or punched off-line by the IBM 1401 Magnetic Tape System. This tape cannot be controlled or used directly by the problem program.
 - (ii) The Alternate Spool Output tape is required to eliminate waiting when the other Spool Output tape is unloaded. This tape drive can be used by the problem program at the expense of waiting while such an unloading is being performed.
 - (iii) The Spool Read tape, used while in an Overlapped mode, contains problem programs about to be run. While in the Bypass mode, this tape drive may be used by the problem program.
 - (iv) The Spool Write tape is used in conjunction with the card reader in the On-Line Overlapped mode to prepare a tape for subsequent reading. The same drive may contain the Spool Scan tape while operating in the Off-Line Overlapped mode. While in the Bypass mode, this drive may be used by the problem program.

For optimal performance, the Write/Scan tape and the Read tape should be on different channels and both output tapes should share a third channel. Over and above these requirements, all other tape drives may be used by the problem program.

All other channels on the basic exchange are not required by MCP or by system programs.

The programming system, under MCP, can operate in a limited way when these minimum requirements are not completely satisfied. However, without the operator's console, the system cannot operate since there is no way to communicate with the operator.

1. The system cannot operate without an IBM 1401 Magnetic Tape System. With the 1401 temporarily inoperative, the system can operate in the Bypass mode. This requires a card reader, operator's console and an output tape. The processing of this tape cannot be performed until the 1401 is operative.
2. Without the disk storage unit, two tapes will be required to simulate the disk. If this requires the use of one of the Spool Input tapes, the system can operate only in the Bypass mode.
3. Without the card reader, the system can operate in one of the overlapped modes which require three tapes and the operator's console.
4. The system cannot operate unless it has at least one output tape. This is required by the Bypass mode.

Although it can be concluded from these statements that the on-line card reader and punch may be dispensed with, in point of fact maintenance activities required their presence in the system.

MINIMUM IBM 1401 SYSTEM FOR USE WITH IBM 7030

An IBM 1401 Magnetic Tape System is used to perform all of the peripheral operations associated with the IBM 7030 System. These operations are:

1. Card-to-tape
2. Tape-to-punch
3. Tape-to-printer
4. Spool input
5. Spool output

These operations require an off-line system with the following minimum components:

1. IBM 1401 Model C3 Processing Unit with column binary.
2. IBM 1402 Model 1 Card Read Punch.
3. IBM 1403 Model 2 Printer.
4. IBM 727 Model II or IV Magnetic Tape Units. At least two are required.

Alternatively, an IBM 1401 Model E3 Magnetic Tape System may be used with IBM 7330 Magnetic Tape Units.

The IBM 1401 Magnetic Tape System is used in place of the individual peripheral equipment ordinarily required to perform off-line functions.

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