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Architecture of the IBM System/360

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Abstract:

The architecture of the newly announced IBM System/360 features four innovations: 1. An approach to storage which permits and exploits very large capacities, hierarchies of speeds, read-only storage for microprogram control, flexible storage protection, and simple program relocation. 2. An input/output system offering new degrees of concurrent operation, compatible channel operation, data rates approaching 5,000,000 characters/second, integrated design of hardware and software, a new low-cost, multiple-channel package sharing main-frame hardware, new provisions for device status information, and a standard channel interface between central processing unit and input/output devices. 3. A truly general-purpose machine organization offering new supervisor facilities, powerful logical processing operations, and a wide variety of data formats. 4. Strict upward and downward machine-language compatibility over a line of six models having a performance range factor of 50. This paper discusses in detail the objectives of the design and the rationale for the main features of the architecture. Emphasis is given to the problems raised by the need for compatibility among central processing units of various size and by the conflicting demands of commercial, scientific, real-time, and logical information processing. A tabular summary of the architecture is shown in the Appendices.

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