

The entire concept
of computers has changed...
IBM System/360

New computer architecture

System/360 marks the beginning of a new computer age... an age characterized by all-purpose systems, with performance capabilities that dwarf previous standards.

For the first time, there is *one* system capable of serving all your data handling needs... no matter how large, or small, or varied... or how often they change.

For the first time, your entire organization can standardize on one computer, one programming logic.

For the first time, it is economically feasible for most data processing users to implement the many new applications that can help management improve competitive posture and profit position.

System/360 is designed to provide the kind of computer you need. From a wide choice of speeds, memory sizes, and processing features... you select the elements that will do your job best.

A new computer architecture provides this unique flexibility. It permits you to get all the processing power you need... when you need it. *You can start small and expand—in easy steps—to a system more powerful than any now available.*

New, solid-logic technology

The circuits in System/360 are the product of a new technology—available for the first time in a general-purpose computer. These new circuits are made with minute transistors and diodes—no bigger than the head of a pin—which are assembled into printed circuits and sealed in a protective casing.

In the development of these new circuits, the speed of the transistors and diodes was increased so much that the distance between them became a critical factor. Even though electronic impulses travel at speeds measured in split-billionths of a second, they were slowing down the computer. So IBM cut the distance. In this new technology, distance between switching components has been significantly reduced.

Computation at nanosecond speeds

In most versions of System/360, actual computation is accomplished through the combined use of memory and special, high-speed registers. The high performance of these elements enables System/360 to attain processing speeds measured in nanoseconds—billionths of a second.

Uniform instruction set

Every System/360 processor employs an identical instruction set...one that includes powerful data channel commands, instructions for program switching, masks, and Boolean calculation...as well as "translate" and "translate and test" commands for converting data from one code to any other, including the American Standard Code for Information Interchange.

This means you can step up to a more powerful processor without extensive reprogramming.

Broad range of memory capacities

IBM has shattered the memory barrier...the limitation on core storage found with every present day computer system.

With System/360, you can start with a memory of 8,000 characters and build up to one with a capacity of over 8,500,000 characters. This means you can process more data at one time...handle jobs faster...cut programming and operating steps...save money.

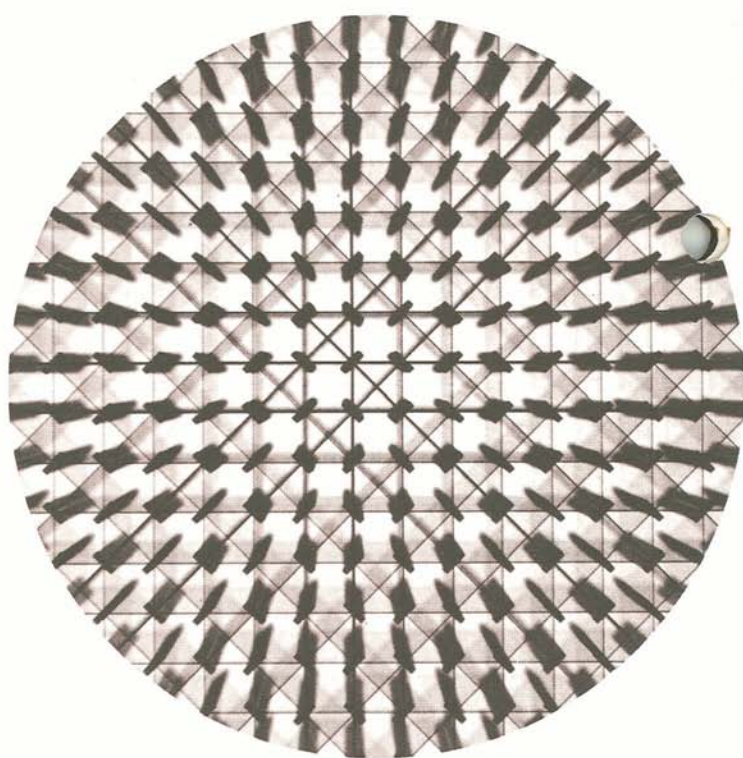
Fixed or floating point arithmetic

System/360 offers facilities for full binary arithmetic, both fixed point and floating point. It will handle arithmetic calculations with ranges of 10^{-78} to 10^{+75} , with over 15-digit accuracy.

With System/360, you can get the powerful arithmetic capability needed for simulation of job shop operations, PERT scheduling, sales forecasting, profit studies.

Decimal-binary operation

System/360 can operate as a decimal machine...and as a binary machine. The control logic, arithmetic functions and internal operation are based on binary logic...an ideal arrangement for high-speed computation. For decimal operation, a variable field length decimal capability is available that approximates the speed of binary operation...while providing the data handling characteristics you want for accounting jobs...the ability to accumulate sums of information in memory...variable field length...*plus* fast parallel data movement and arithmetic.



Memory protection

A powerful core storage protection feature protects your programs against other programs in the computer as well as from incoming data...safeguarding your programs during program debugging, data communication, and real-time processing.

A new standard for systems availability

System/360's ability to cope with processing errors is destined to establish a new, high standard for systems availability. All movements of data throughout the system are checked. Should an error occur—wherever it occurs—the control program detects and records it.

Depending on the control program in use, it will either try to correct the error or "go around" it. If these procedures are successful, processing continues *without operator intervention*. If not successful, the operator is notified of the error, its nature and location...information that makes it possible to go to the source of the error and correct it in a minimum of time.

For management, this unique capability spells greater systems availability, and less down time.

New systems flexibility

Any System/360 can accommodate a myriad of input/output devices. You select just the devices you need now... devices that provide an economical balance with the speed of your computer. And you can maintain this balance as your workload grows because *both* input/output and processing speeds can be increased, in small increments, over a wide performance range.

New magnetic tape drives

System/360 features an entirely new family of magnetic tape drives... a family that offers higher performance and a new packaging concept... to give you lower job costs. The new tape drives offer data rates ranging from 22,500 up to 90,000 characters per second... and double these rates for numeric processing.

New Hypertape Drive

A new model of the IBM 7340 Hypertape Drive provides data rates of up to 340,000 alphabetic characters and 680,000 digits per second... a performance that far surpasses that of any other tape drive available today.

New channel power

The data channels—used to carry data in and out of the computer—range in performance from 200,000 to 1,200,000 characters per second... and double these rates in numeric processing... a performance span without precedent. With this kind of channel power you can increase systems throughput, speed data communication, and lower job costs.



New visual display units

System/360 provides dynamic visual display of computer-generated information... through the IBM 2250 Display Unit. For scientific computing problems, information retrieval, computer-aided design applications... anywhere that graphic display can help the user... the IBM 2250 provides a dramatic solution.

System/360 can also satisfy all customer service applications which require rapid reference to complete records. The IBM 1015 Inquiry Display Terminal can display records from your central file on a dark trace cathode ray tube similar to a television screen... in a matter of seconds.



Audio response to computer inquiries

The IBM 7770 Audio Response Unit is IBM's dramatic answer to the increased business need for direct, prompt and accurate replies to inquiries. By simply picking up a telephone with the proper subset attachment and dialing an inquiry, you can get back a spoken reply... in seconds. What the Audio Response Unit can "say" is determined by your requirements.

Full punched card capability

System/360 covers the full range of card processing requirements... with units that will read up to 800 cards a minute and punch up to 250 cards a minute. Multiple card processing units can be accommodated by the system.

Full printing capability

The printing capacity of System/360 can be expanded—in easy, economical steps—to cover a wide performance range. You can choose from printers ranging in performance from 240 up to 1,100 alphameric lines per minute and from 600 up to 1,400 numeric lines per minute.

Proven magnetic character readers

The 1412 and 1419 Magnetic Character Readers—both available with System/360—have earned broad acceptance for their ability to speed processing of checks.

Full optical character reading capability

System/360 offers a variety of optical reading devices to speed preparation of input data, minimize document handling, and eliminate time-consuming transcription of source documents.

Paper tape reading capability

System/360 offers a paper tape reader that will read 5-, 6-, 7-, or 8-channel paper tape at a rate of up to 1,000 characters per second. It is particularly applicable for jobs such as data communication, source recording, scientific data processing and data acquisition.



New storage units

For direct access to master files...for storage of programs... for sorting records... System/360 offers a tremendous array of direct access storage units to provide the filing speed, flexibility and capacity you need.

For speed and flexibility: The IBM 2311 Disk Storage Drive with high-capacity, removable disk packs affords rapid access to any records you care to put on-line...inventory, customer records, payroll. Data can be transferred in or out of the file at a rate of 156,000 alphanumeric characters per second...and at double this rate in numeric processing.

For speed and greater on-line capacity: The IBM 1302 Disk Storage will give you that additional capacity—plus high-speed capability for sorting records and handling applications requiring frequent references to large volumes of data.

For direct access to billions of characters: IBM 2321 Data Cell Drives afford direct access to more than 3 billion characters or 6 billion digits through each 2841 Storage Control attached to your system. The 2321 is ideal for storage of sequentially organized data records on-line, to satisfy status inquiries from executives, branch managers, shop foremen, any authorized person.

For top speed: The new IBM 2301 Drum Storage will read or write data records or programs at the rate of 1,200,000 characters per second. It was designed specifically to handle program storage, input/output buffering...any application requiring an extremely fast direct access storage unit.

New, simplified storage control

System/360 offers a unique, powerful and greatly simplified approach to applications requiring direct access storage. The IBM 2841 Storage Control provides a single control over all attached disk and data cell storage units. It permits you to have variable record lengths on any track of any direct access unit. For the first time, your data files may be organized to take advantage of the individual characteristics of your applications. This unique capability gives new vitality to the concepts of "real-time processing" and "total information systems."

Data communication—a System/360 bonus

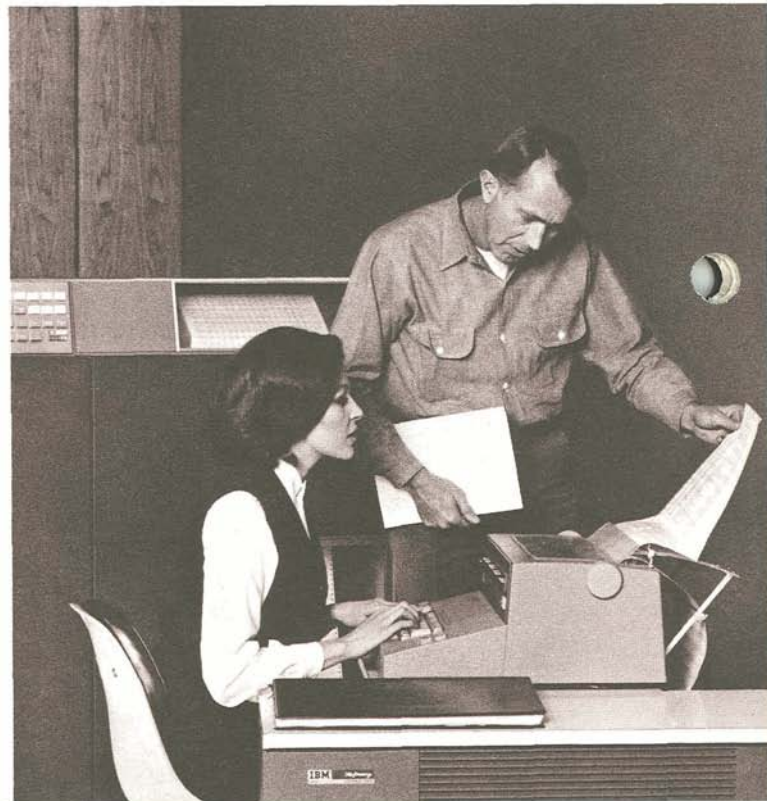
System/360 can serve as the hub of a data communication system *at the same time* it handles your normal data processing operations. It offers this added capability *at remarkably low cost* because the very features that make System/360 such an efficient data processing system are, for the most part, *the same ones* required for efficient handling of data communication. These include:

Overlapped channels	Full systems compatibility
Micro-second switching	Low cost transmission control
Program relocatability	Dynamic storage allocation
Storage protection	Multi-code conversion, including ASCII, BCD, binary
New direct access storage	Wide choice of terminals
Modular core storage	

Using existing communication facilities, telephone or telegraph networks, leased or public lines...you can link branch offices, plants, warehouses with your System/360. The system will accommodate up to 256 communication lines. You can start with only one line...and add on, as needed.

From terminals located anywhere within the span of your communications network, data can be entered directly to the system to update central files. Inquiries from any point can be relayed to System/360...processed by the computer...and answered in a matter of seconds. Depending on the facilities provided at the sending terminal, the answer can come back in many forms. It can be displayed on a cathode ray tube resembling a television screen. It can be printed out or punched on cards or paper tape. It can come back as a spoken reply through any telephone having proper subset attachment.

For the first time, tremendous processing power...plus unparalleled direct access storage capability...plus comprehensive communication facilities...are available with *one* system. For the first time, the total information requirements of an organization can be satisfied...at reasonable cost.



Comprehensive programming support

System/360 comes with a complete Operating System. This is a unique package of modular, compatible programs...one that truly complements the modularity and growth potential of System/360...one that provides a better environment for productivity. From this comprehensive support package, you select the elements which precisely match your needs.

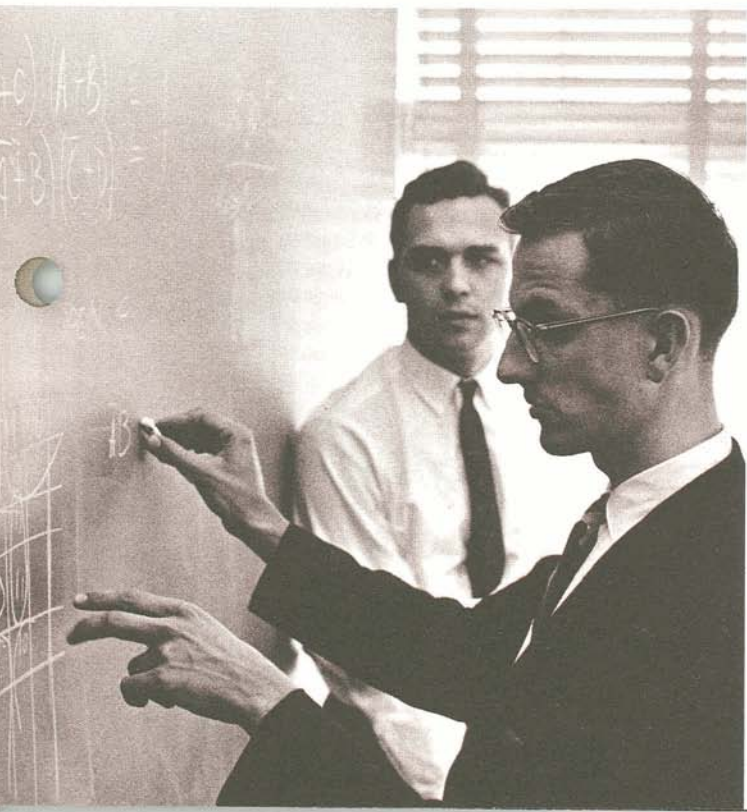
Non-stop operations: The Operating System features a comprehensive set of control programs that provides for fully automatic, non-stop operation of the system. Once a job or series of jobs are fed into the system, the control programs take charge. The system is always operational...ready to respond to real-time application demands...ready to pull the right program from the systems library.

The control programs regulate the job flow at computer speed. They provide extensive control over communications traffic. The control programs permit System/360 to virtually run itself, continuously and without interruption, once the programs and data for a series of jobs are entered into the system.

Powerful programming languages: The Operating System also includes compilers for programs written in FORTRAN and COBOL as well as symbolic assemblers. Problems can be stated in terms related to English, mathematics or symbolic language... so that anyone who needs the services of your computer installation can write a program with a minimum of training.

The Operating System includes FORTRAN IV, plus a new programming language developed especially for use with System/360. The Operating System also includes a complete set of service programs... utility routines, sort/merge, report program generator... to cover all standard operating functions of the system.

It is this kind of programming support that can help cut your programming costs, reduce idle computer time, and keep your installation running at maximum efficiency.



System/360 encompasses all data handling needs

For general data processing: Now, with System/360, insurance companies can institute total information systems at lower costs than ever before... systems designed to serve the home office, field offices, agents... and customers.



Now, manufacturing organizations can provide operating management with complete information on production schedules, work in process, inventories, as well as profitability studies by product, by department, by plant.

Now, financial institutions can institute comprehensive systems capable of providing accurate and timely facts to the investment officers charged with profit-making responsibility... systems that will handle bank cost and asset allocation, customer data services, centralized information filing, and on-line teller operations.

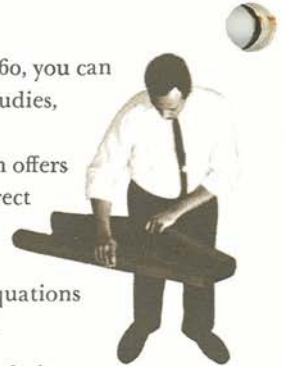
Now, colleges and universities can employ the latest computer concepts and techniques in the study of physical and life sciences and business education. Now, hospitals can streamline file inquiry and claims accounting. Now, state and local governments can accelerate record handling in motor vehicle departments, law enforcement agencies, highway departments, and finance agencies. Now, public utilities can profit from up-to-the-minute data on credit ratings, service calls, system load data, materials and supplies information. Now, with System/360, every data processing user can enjoy this kind of data handling efficiency.

For data acquisition and control: System/360 can take product test data, medical data, process data—as fast as it is generated—and record it for later processing.



System/360 offers the additional capability of monitoring and/or controlling one or more activities at remote locations. It will handle test stand data logging, simulator-generated data recording. It offers facilities for industrial quality testing... operations monitoring for discrete manufacturing industries... traffic signal control... as well as complete facilities for oil field automation.

For scientific computing: With System/360, you can handle linear programming, simulation studies, any general engineering problem... more economically than ever before. The system offers large capacity core storage and massive direct access storage... to provide instant access to large volumes of data, an essential for handling non-linear partial differential equations and other forms of convergence problems.



More important, System/360 offers all the design characteristics needed to accommodate the new, more advanced scientific applications, such as those encountered in high-energy physics, life sciences, space exploration, real-time weather prediction, and other real-time simulation applications. And it offers the remote terminal facilities that these jobs require.

With System/360, you can design a complete product, device or system in one processing run... rather than developing the design in piecemeal fashion. The interaction effects between various design phases are resolved or eliminated as a matter of course because System/360 can accommodate multiple aspects of the design problem *at one time*.

System/360 comes with improved FORTRAN and COBOL compilers and provisions for ASCII (American Standard Code for Information Interchange). It can handle any 8-bit code, either binary or decimal, and translate from one code to another.

For data communication: In addition to providing the communication facilities needed for streamlining the processing of business and scientific data... System/360 can also function as a message control center in an existing communications system to speed message-handling and to handle peak loads more efficiently.



For more information please contact your local IBM representative.

102646088



IBM®

International Business Machines Corporation
Data Processing Division, 112 East Post Road
White Plains, New York 10601

