Balanced performance in a time sharing environment

IBM TSS/360

International Business Machines Corporation
Data Processing Division
112 East Post Road, White Plains, N.Y. 10601
(USA only)

IBM World Trade Corporation
821 United Nations Plaza, New York, N.Y. 10017
(International)

An open-ended command system gives a powerful set of commands by which the programmer can tell the system what he wants it to do. These commands enable the user to create, edit and erase data sets, compile and execute FORTRAN, PL/I and Assembler language programs, and debug programs—even while executing them.

He can use the command structure supplied with TSS/360 without modification, tailor the system-supplied commands to meet his own requirements, or define his own commands if he wishes.

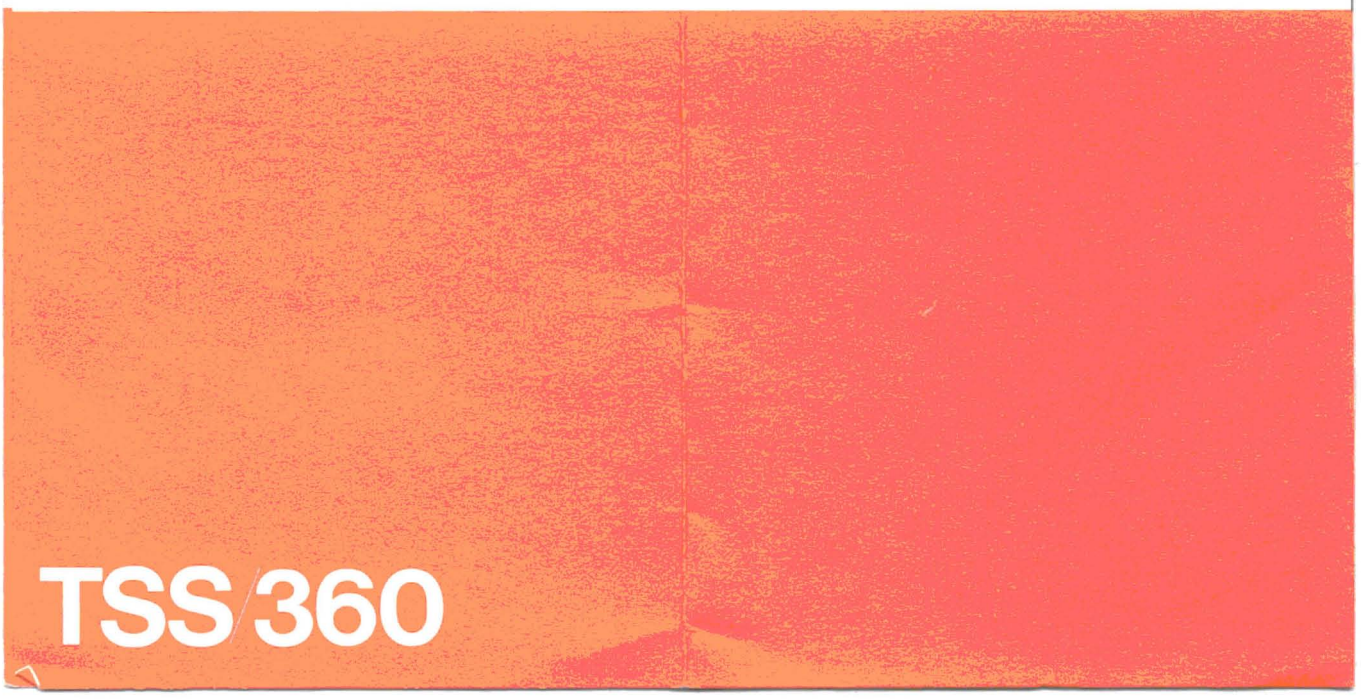
Data management with TSS/360 is handled by virtual access methods. They are called virtual access because, like virtual memory, the methods are device independent. The virtual access methods include sequential, indexed sequential, and partitioned access. Record formats can be fixed or variable. Other features include tape-to-disk and disk-to-tape transfers, and automatic cataloging and recataloging of data sets.

TSS/360 also supports two sequential access methods which provide data interchange capabilities between TSS/360 and OS/360.

TSS/360 takes full advantage of the powerful resources of the Model 67. It balances the workload of the system by handling background jobs concurrently with foreground interactive processing. The user can even initiate background jobs from a remote terminal. The accent, therefore, is on resource sharing; TSS/360 has been designed to share main storage, channel facilities, and direct access file space among a large number of users.

Want more information? For further details about TSS/360, ask your IBM representative for any of these documents:

Concepts and Facilities, C28-2003
Assembler Language, C28-2000
Assembler User Macro Instructions, C28-2004
Assembler Programmer's Guide, C28-2032
IBM FORTRAN IV, C28-2007
FORTRAN IV Library Subprograms, C28-2026
FORTRAN Programmer's Guide, C28-2025
Linkage Editor, C28-2005
Command System User's Guide, C28-2001
Managers' & Administrators' Guide, C28-2024
Operator's Guide, C28-2033
Independent Utilities, C28-2038
System Programmer's Guide, C28-2008
System Generation and Maintenance, C28-2010
Terminal User's Guide, C28-2017
System Messages, C28-2037
Time Sharing Support System, C28-2006
Master Index, C28-2023
Addendum, C28-2043



TSS/360 is a large-scale, general purpose operating system. It has extensive facilities for interactive computing as well as the capability to perform background batch processing to make the fullest possible use of system resources. TSS/360 is an IBM Type I program that is designed for use with System/360 Model 67.

The slice of time concept is key to TSS/360. Users communicate directly with the computer simultaneously through IBM 1050 or 2741 terminals. The system allocates a slice of time to each user in turn so that each has access to all job-related hardware and software during every one of his time slices. A conversational interaction can be maintained between the user and the system because the interval in which other jobs occupy the system passes so quickly.

Virtual memory is another important concept of TSS/360. It allows the programmer to address up to 16 million bytes or, with an optional 32-bit addressing scheme, up to 4 billion bytes. That means the user is provided main storage capacity which is potentially larger than that of the computer itself. This is achieved with the dynamic address translation feature on the Model 67 which allows TSS/360 to allocate storage to the program as it is required—4K at a time.

Dynamic object-time program control is another feature of TSS/360. It lets the programmer use source-level references to make logic tests during object-time debugging. After object programs are running, control statements can be introduced—without recompiling—to modify variables and program logic or to obtain interim answers.

Sharing and protection of both programs and data are important in a time sharing environment. TSS/360 will allow the user to share both code and data with other users—or prohibit sharing if desired. Access is regulated by read-only, read-write locks, and system interlocks to provide protection against unauthorized access.

Through sharing, common users can have the latest data available simultaneously. Another important feature here is that user code is reenterable, which means that a given module of code can be accessed by more than one terminal user at a time.

Variable scheduling, through a table driven scheduler, can give users as many as 256 definable scheduling levels with varying time-slice lengths and frequencies, depending on the priority and type of process involved. The installation can provide dynamic scheduling to meet specific user requirements.

TSS/360