

The GCOS/Basic Executive System2 executive modules for the 6/30 Models provide the base on which a user's application can be constructed without the need to individually develop the necessary set of support facilities.

The executive modules support the detail level of an online, interrupt-driven system operation with such facilities as task dispatching and scheduling, input/output execution (with device independence), timing, and trap handling. These facilities are selected by the user and reside in memory. They require no peripheral support.

Outstanding features of the executive modules include:

- Modules support up to 64 vectored priority levels.
- Hardware controls execution of tasks.
- Tasks run at user-assigned device priority levels.
- Context save and restore function is automatic.
- Software polling is not needed to identify the interrupting device.
- The trap structure enhances system integrity by detecting many program error conditions.
- Applications may be loaded and started on Level 6 configurations that have a Basic Control Panel.
- Disk-resident tasks can be loaded as overlays.
- The operator console (KSR or low-cost CRT) can be attached through a Multiline Communications Processor (MLCP).

MODULES

- *Configuration Load Manager* – The Configuration Load Manager supports communications, cartridge disk, and operator and file manager parameters. It also determines peripheral device addresses and initializes the device drivers. Optionally, it creates buffer pools. After loading, the Configuration Load Manager starts the highest priority application.
- *Overlay Loader* – This module supports the loading of overlay code into memory from the I/O device as requested by the application program. The entire facility for using overlays is provided by this module and the linker program development tool.

- *Task Manager* – This module processes requests to schedule tasks according to priority, returning control to interrupted tasks and synchronizing, suspending, and terminating tasks.
- *Trap Manager* – Upon recognizing a trap signal, the Trap Manager performs a partial context-save of the running program in a predefined memory area. Information is stored describing the cause of the trap (for example, an illegal instruction, an option not present, or an arithmetic result too large) in the same area of memory. A set of entry points allows the user to supply a specific trap handling response. A software trace feature is provided on branches only.
- *Clock Manager* – In addition to maintaining the date and time of day, the Clock Manager initiates interrupts and requests for processing which are based on the passage of time.
- *Operator Interface* – This module allows messages for the operator to be printed on the console; operator responses pass to the application. Questions to the operator may be answered in any order. When there is no console, the interface is with the control panel.
- *Buffer Manager* – The Buffer Manager maintains the memory queues and responds to requests from a user task for preselected blocks of memory. When the block has been used, it returns to control of the Buffer Manager. The module can manage different sizes of memory blocks.
- *Online Input/Output Elements* – While under control of the executive, the online I/O elements support the diskette, cartridge disk, card reader, printer, and console. The file system portion handles system requests to open and close files and to read and write direct access files. Moreover, files can be created or extended during application execution.

SYSTEM REQUIREMENTS

The executive modules require no peripheral devices other than the diskette, cartridge disk, or paper tape unit from which they are loaded.

Specifications may change as design improvements are introduced.

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