

**PRODUCT DESCRIPTION**

HASP/16 and HASP/32 are Perkin-Elmer's family of compatible HASP Multileaving Workstation Emulator Tasks. HASP/16 and HASP/32 permit Perkin-Elmer's wide variety of minicomputer systems to emulate the popular IBM HASP workstation.

Part of the array of advanced data communication products, HASP/16 and HASP/32 allow users to submit batch jobs at a remote site for transmission over a Binary Synchronous (bisync) communication line. The batch jobs are processed by a central host computer, and results are returned to the remote location.

The HASP multileaving protocol provides for bidirectional data transmission. Multileaving enables significantly higher throughput than is possible with the standard bisync protocol used by Remote Job Entry (RJE) terminals such as the IBM 2780/3780. These terminals are capable of transmission in only one direction for the duration of the job.

HASP/16 and HASP/32 support up to seven concurrent input/output streams, a console, and a binary synchronous communication line. Multileaved communication allows concurrent operation of all card readers and printers.

The family of HASP workstation emulators allows a user to transfer data between a device or file on the Perkin-Elmer processor and a processor at the other end of the communication line. The capability is provided in a device-independent manner, using the facilities of the event-driven operating systems, OS/16 and OS/32. HASP/16 and HASP/32 permit the use of both disc and tape for job stream I/O devices.

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The central host computer can be either an IBM 360/370 system supporting HASP workstations, or another computer system which emulates the standard IBM host. HASP/16 and HASP/32 can also be used to provide processor-to-processor communications between two Perkin-Elmer systems operating in a HOST/REMOTE mode. The HOST and REMOTE computers can multiplex up to seven data streams in each direction over a single communication line.

HASP/16 and HASP/32 are designed to execute concurrently with application programs and system tasks allowing users to increase the capability of their systems without decreasing performance.

**FEATURES**

- Multileaved binary synchronous communications over dial-up or leased lines at speeds up to 19.2K baud.
- Flexibility in configuring the HASP workstation via system generation procedures.
- Support for nonstandard HASP peripherals, including disc and tape.
- Spooling support for send and receive job streams to and from disc to assure high throughput.
- Control of the HASP/16 and HASP/32 tasks by other tasks or from traditional command input devices.
- Free format of commands wherever possible.
- Full data compression/decompression to obtain high communication line efficiency.
- Automatic communication line error recovery.
- Display of the status of job streams in the system.
- Logging of all job streams, errors, commands, etc., with computation of operating statistics for HASP/32.

## COMMUNICATIONS SOLUTION

The HASP Workstation Emulators provides straightforward communications support for a variety of end-user applications. HASP/16 and HASP/32 can be installed and up-and-running in a matter of hours without requiring any application programming. Return-on-investment is almost immediate. Simple networks of satellite Perkin-Elmer 16-bit and 32-bit processors and central 32-bit, 16-bit or non-Perkin-Elmer mainframe computers can be put in place quickly. Network operation is sure and reliable because it uses industry-proven protocols and technique.

## REMOTE JOB ENTRY

The traditional role of a HASP workstation is to provide remote sites with access to the computing facilities of a central site. Remote Job Entry (RJE) provides an intelligent growth path for a majority of users, located between the extremes of completely centralized and distributed processing. RJE networks can be built using inexpensive 16-bit computers operating as dedicated HASP workstations. As workload increases, the remote site can be expanded to perform concurrent processing on the original 16-bit system, a larger 16-bit system or, if required, a 32-bit system.

## OPERATIONAL CHARACTERISTICS

HASP/16 and HASP/32 Emulator Tasks perform communication multiplexor/demultiplexor functions for several concurrent data streams. Under control of a command input device or another task, HASP/16 and HASP/32 read data from an input device which can be a standard unit record device or any device capable of device-independent I/O under OS/16 and OS/32. Input records are identified, compressed (leading/trailing blanks and repeated characters are deleted), and blocked. Blocked records are queued for transmission over the communication line. Before any job stream is started or transmission takes place, permission must be granted by the host processor.

The Emulators output records to traditional unit record devices or to any device capable of device-independent I/O under OS/16 and OS/32. Blocked records received from the host over the communication line are deblocked, decompressed (leading/trailing blanks and repeated characters inserted), and queued for output to devices. Permission to transmit a job stream is not granted to HASP unless the output device or file for the stream has been indicated.

## COMMAND PROCESSOR

The HASP Emulator Tasks incorporate a powerful command processor which accepts and executes commands to manage the operation of the workstation. Commands can be entered from the system console, from peripheral devices, or from other tasks in the system via the "Send Message" facility. Commands are decoded and checked for errors, with all error messages logged on an appropriate device or to a task. All commands are "proceed commands" which permit one command to be executed for one job stream while a new command is being entered for another job stream.

The HASP Emulator Task command repertoire consists of commands to:

- Control job streams
- Control the communication line
- Manage the Emulator Task
- Display the status of job streams in the system
- Position media on file devices (HASP/32)
- Display, log, and compute operating statistics (HASP/32).

Figure 1 depicts the relationships between the HASP emulator and other operating software.

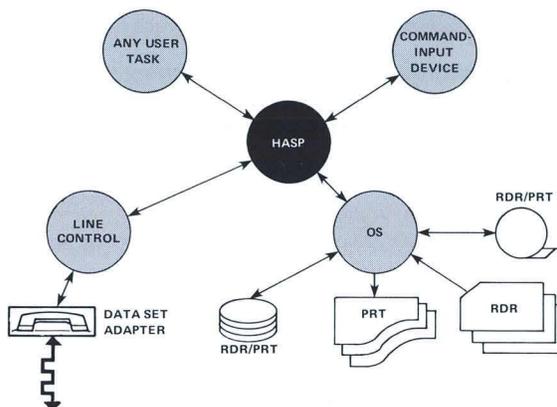


Figure 1. HASP Operation

## PRODUCT NUMBERS

S90-019 HASP/16  
S90-015 HASP/32

## REFERENCES

29-636 HASP/16 Users Manual  
29-523 HASP/32 Users Manual

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Manufacturing facilities, and Sales/Service offices throughout the world.

The information contained herein is intended to be a general description and is subject to change with product enhancement.

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