

- \* **Step through the program** - Execute the program on a line-by-line basis
- \* **Examine locations** - Display the contents of a location
- \* **Modify locations** - Change data and instructions at a location
- \* **Call routines** - Call routines in the program from the interactive command level
- \* **Log the debugger session** - Place a record of the debugger session in a log file
- \* **Run from a command procedure** - Invoke a command procedure that contains debugger commands (created from a log file and/or an editing session) to return a previous session, or to check a series of items in the program

Expressions and data formats are generally similar to those of the language in which the program being debugged is written.

A patch utility permits the modification of programs without recompilation and linking. Fixes are applied directly to the executable image files. Locations in programs, however, can be addressed using the same symbols that are in the source code (i.e., the programmer does not have to interpolate from listings and maps). In addition, the utility automatically relocates patches that are larger than the program content being replaced.

The definition, creation, loading, and maintenance of efficient VAX RMS Indexed Sequential (ISAM) files is facilitated by a set of utilities that are integrated by a common File Definition Language (FDL). Analysis of the current state of any RMS file provides information on the file's internal efficiency and validity. The space efficiency of an RMS ISAM file can be improved with a reclamation utility. The most appropriate set of RMS file parameters can be found with an RMS file tuning tool. The utilities that create, efficiently load and reclaim space in RMS files can be called by user programs as well as invoked from the DCL command language. They reside in shareable images.

## Operations

The basic unit of execution in VAX/VMS is the process, which consists of context and executable images. The context identifies the process and describes its current state. The executable images consist of system and/or user programs that have been compiled and linked.