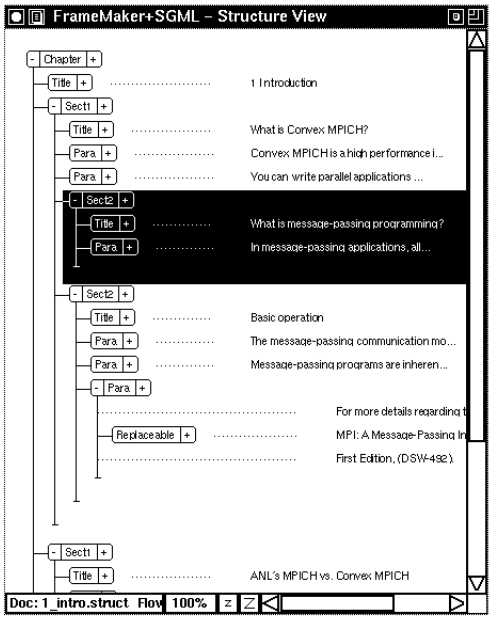
What is Convex MPICH?

Convex MPICH is a high performance implementation of version 1.1 of the Message Passing Interface (MPI) standard, developed for use on Exemplar systems; it is based on Argonne National Lab's (ANL) MPICH implementation of MPI. It uses a proprietary low-level MPICH device optimized for high-bandwidth /low-latency message passing on the Exemplar global shared memory (GSM) architecture.

You can write parallel applications in Fortran or C by using message-passing constructs common to most distributed- memory computers. Convex MPICH supplies the procedures that allow processes on Exemplar systems to communicate and synchronize with each other, enabling programmers to create and run Exemplar applications composed of one or more processes that interact using the Convex MPICH communication model.

What is message-passing programming?

In message-passing applications, all parallelism and data distribution is handled explicitly by the programmer. Communication is specified among processes by passing messages using MPI or PVM procedures. Its wide scalability and portability make the message-passing paradigm attractive.

Basic operation

The message-passing communication model allows you to design applications to be run as a collection of processes. Once you have decided on a process-to-process communication model within the application, the interaction model can be translated into a program containing Convex MPICH function calls and messaging data. Convex MPICH allows you to implement process interactions that range from specific messages passed between individually identified processes to collective communications that coordinate messaging for all the processes of an application.