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"Detecção de Predicados Globais em Programas MPI"

The process of debugging computer programs is vital to the development of efficient applications. Debugging tools are widely available in sequential programming environments where, wthout much effort, it is possible for programmer to work on his code avoiding additional worries.In distributed programming environments such tools are not available.

In this dissertation we present the implementation of a tool that makes it possible to establish breakpoints in distributed programs where processes communicate only by messages passing.

We present the implementation of four algorithms related to the following types of breakpoints: unconditional breakpoints, breakpoints based on disjunctive predicates, breakpoints based on stable conjunctive predicates and breakpoints based on generic conjunctive predicates.

The algorithms are implemented by using the MPI standart. The resulting tool is tested by applying it to detect global predicates in a distributeted parallel genetic application which is used to solve the Traveling Purchaser Problem (TPP).

The tool works by analyzing the users source code and adding or changing code as needed, in order to perform the detection of global predicate that the user is interested in.