

GENO

TOMLAB /GENO is a package for static or dynamic, uni- or multi-objective optimization based on a real-coded genetic algorithm.

For more information about TOMLAB /GENO see the [TOMLAB /GENO User's Guide](#).



LGO

TOMLAB /LGO combines deterministic and stochastic, derivative-free global and local optimization strategies in a seamlessly integrated manner. The LGO solver suite is maintained by Pinter Consulting Services, Inc. see <http://www.pinterconsulting.com/>.

The derivative-free (direct search) approach implemented in LGO enables fast global search; and it is of particular relevance with respect to applications, in which higher order (gradient, Hessian,...) information is difficult or costly to obtain.

The current LGO implementation incorporates the following solver modules:

- Branch-and-bound global search method (BB).
- Global adaptive random search (GARS).
- Multi-start based global random search (MS).
- Constrained local search (LS) by the reduced gradient method.

The branch-and-bound search method (BB) is a robust implementation of a theoretically established global optimization approach. It combines set partition steps with deterministic and randomized sampling. GARS is a non-trivial improvement over that passive search approach in the sense that it adaptively reduces the search region.

Multi-start (MS) based global search applies a similar search strategy to GARS; however, the total sampling effort is distributed among several searches.

The local search phase (LS) is currently based on the generalized reduced gradient algorithm.

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For user's guides to all TOMLAB products see the [Manual section](#).