

recongo: ASP-based Combinatorial Reconfiguration Problem Solver

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1 Metric

- solver#shortest

2 Engine: Core Solver or Algorithm

Answer Set Programming (ASP) is an approach to declarative problem solving. ASP provides a rich language and is well suited for modeling combinatorial problems in Artificial Intelligence and Computer Science. Recent improvements in the effectiveness of ASP systems have encouraged researchers to use ASP for solving problems in diverse areas, such as automated planning, constraint satisfaction, model checking, etc.

The *recongo* solver is an ASP-based combinatorial reconfiguration problem solver. *recongo* reads a problem instance and converts it into ASP facts. In turn, these facts are combined with a first-order encoding for problem solving, which is subsequently solved by a general-purpose ASP system, in our case *clingo*. For CoRe Challenge 2022, we develop a basic ASP encoding and some additional hints for solving independent set reconfiguration problems.

- single-engine

3 Computation Environment

- OS: Mac OS
- CPU: 3.3GHz 12core Intel Xeon W
- MEM: 96GB
- ASP system: *clingo*-5.5.1 ¹

¹<https://potassco.org/clingo/>