CVC5-Cloud at the SMT Competition 2022

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Components

- Divide-and-conquer algorithm
- CVC5 as the base solver
- A splitter based on CVC5
- An MPI-based architecture for scheduling

Splitter

- Uses existing infrastructure and smarts of CVC5
- Intercepts calls to theory solvers after configurable number of checks
- Collects subset of literals $l_1, \ldots, l_m$ from the current decision trail
- Blocks $\neg(l_1 \wedge \ldots \wedge l_m)$
- Generates n-th cube $l_1 \wedge \ldots \wedge l_m \wedge \neg C_1 \wedge \ldots \wedge C_{n-1}$
- If less than two partitions are made, tries with other parameters