

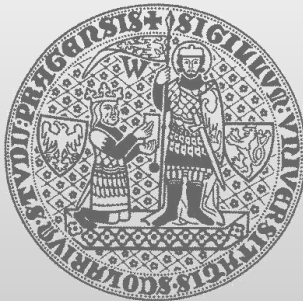
CEGAR

<http://d3s.mff.cuni.cz>

Department of
Distributed and
Dependable
Systems



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faculty of mathematics and physics

Tools

- Connect to some Linux machine
 - using SSH (Putty)
- Download
 - http://d3s.mff.cuni.cz/teaching/program_analysis_verification/files/cegar.tgz
- Package contains Linux binaries of
 - BOPPO
 - Model checker for boolean programs
 - SATABS v1.9
 - CEGAR + SAT
 - BLAST v2.5
 - Lazy abstraction
 - Examples
 - Some taken from tutorials created by authors of respective tools

- Verification tool for C and C++ programs
 - Based on CEGAR
 - Uses a SAT solver
- Key features
 - Variables represented as bit vectors (binary level)
 - Computer arithmetic (overflow, bit operators, ...)
- Developed at ETH Zurich & Carnegie Mellon Uni
- <http://www.cprover.org/satabs/>
- Source code and binaries freely available
 - Platforms: Windows, Linux, Mac OS

BLAST

- Key feature: lazy predicate abstraction
- Developed at UC Berkeley & EPFL (Lausanne)
- <http://mtc.epfl.ch/software-tools/blast/>
- Obsoleted by CPAchecker
 - Many advanced features and optimizations
 - <http://cpachecker.sosy-lab.org/>

BLAST & SATABS

- Try to run BLAST and SATABS on your own programs in C/C++
 - Insert some assertions to your code (if necessary)