

Analysis report examination with CUBE

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- Parallel program analysis report exploration tools
 - Libraries for XML report reading & writing
 - Algebra utilities for report processing
 - GUI for interactive analysis exploration
 - requires Qt4
- Originally developed as part of Scalasca toolset
- Now available as a separate component
 - Can be installed independently of Score-P, e.g., on laptop or desktop
 - Latest release: CUBE 4.1.6 (March 2013)

- Representation of values (severity matrix) on three hierarchical axes
 - Performance property (metric)
 - Call-tree path (program location)
 - System location (process/thread)
- Three coupled tree browsers
- CUBE displays severities
 - As value: for precise comparison
 - As colour: for easy identification of hotspots
 - Inclusive value when closed & exclusive value when expanded
 - Customizable via display mode







11th VI-HPS Tuning Workshop, 22-25 April 2013, MdS, Saclay



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- Inclusive
 - Information of all sub-elements aggregated into single value
- Exclusive
 - Information cannot be subdivided further













VI-HPS

Source-code view



	/home/geimer/Proje	cts/Tests/NPB3.3-MZ-MP	l/BT-MZ/solve_subs.f	×
subroutine binvcrhs(c	lhs,c,r)			
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Read only	Save	Save as	Font	Close





















- Absolute
 - Absolute value shown in seconds/bytes/occurances
- Selection percent
 - Value shown as percentage of the value of the selected node "on the left" (metric/call path)
- Peer percent (system tree only)
 - Value shown as percentage relative to the maximum peer value









Context-sensitive help





Change into help mode for display components





• Extracting solver sub-tree from analysis report

% cube_cut -r '<<SMG.Solve>>' scorep_smg2000/profile.cubex Writing cut.cubex... done.

• Calculating difference of two reports

% cube_diff scorep_smg2000/profile.cubex cut.cubex Writing diff.cubex... done.

- Additional utilities for merging, calculating mean, etc.
 - Default output of cube_utility is a new report utility.cubex
- Further utilities for report scoring & statistics
- Run utility with "-h" (or no arguments) for brief usage info





CUBE

- Parallel program analysis report exploration tools
 - Libraries for XML report reading & writing
 - Algebra utilities for report processing
 - GUI for interactive analysis exploration
- Available under New BSD open-source license
- Documentation & Sources:
 - http://www.score-p.org
- User guide also part of installation:
 - `cube-config --cube-dir`/share/doc/CubeGuide.pdf
- Contact:
 - mailto: scalasca@fz-juelich.de

