6th International Confluence Competition

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CoCo Organizing Committee

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Overview

- CoCo 2017
- Tools
- Cops
- Scoring
- StarExec
- Results

CoCo 2017

- 6th International Confluence Competition
- nine regular and two combined categories
  - TRS — first-order rewrite systems
  - CTRS — first-order conditional rewrite systems
  - CPF-TRS — certified confluence proofs for TRSs
  - CPF-CTRS — certified confluence proofs for CTRSs
  - HRS — higher-order pattern rewrite systems
  - GCR — ground confluence of many-sorted TRSs
  - NFP — normal form property of TRSs
  - UNC — unique normal forms with respect to conversion for TRSs
  - UNR — unique normal forms with respect to reduction for TRSs
  - UN — unique normalization of TRSs: NFP + UNC + UNR
  - CPF — certified confluence proofs: CPF-TRS + CPF-CTRS
- powered by StarExec

CoCo 2017

TRS

problems: 100
solvers: **ACP ver.0.51 2017 CoLL-Saigawa CSI**

ACP ver.0.51 2017 (0 of 100): score: **0.00%**
YES:0 NO:0 MAYBE:0

CoLL-Saigawa (0 of 100): score: **0.00%**
YES:0 NO:0 MAYBE:0

CSI (0 of 100): score: **0.00%**
YES:0 NO:0 MAYBE:0

CTRS

problems: 100
solvers: **CO3 ConCon 1.5**

CO3 (0 of 100): score: **0.00%**
YES:0 NO:0 MAYBE:0

ConCon 1.5 (0 of 100): score: **0.00%**
YES:0 NO:0 MAYBE:0

HRS

problems: 77
solvers: **ACPH ver.0.02 2017 CSI^ho SOL-Ver1c_2017**

ACPH ver.0.02 2017 (0 of 77): score: **0.00%**
YES:0 NO:0 MAYBE:0

CSI^ho (0 of 77): score: **0.00%**
YES:0 NO:0 MAYBE:0

SOL-Ver1c_2017 (0 of 77): score: **0.00%**
YES:0 NO:0 MAYBE:0

CPF-TRS

problems: 100
solvers: **ACP ver.0.51 and CeTA 2017 CSI+CeTA**

ACP ver.0.51 and CeTA 2017 (0 of 100): score: **0.00%**
YES:0 NO:0 MAYBE:0

CSI+CeTA (0 of 100): score: **0.00%**
YES:0 NO:0 MAYBE:0

CPF-CTRS

problems: 100
solvers: **ConCon 1.5 + CeTA**

ConCon 1.5 + CeTA (0 of 100): score: **0.00%**
YES:0 NO:0 MAYBE:0

GCR

problems: 64
solvers: **AGCP ver.0.03 FORT 1.0**

AGCP ver.0.03 (0 of 64): score: **0.00%**
YES:0 NO:0 MAYBE:0

FORT 1.0 (0 of 64): score: **0.00%**
YES:0 NO:0 MAYBE:0

NFP

problems: 60
solvers: **CSI FORT 1.0**

CSI (0 of 60): score: **0.00%**
YES:0 NO:0 MAYBE:0

FORT 1.0 (0 of 60): score: **0.00%**
YES:0 NO:0 MAYBE:0

UNC

problems: 60
solvers: **CSI FORT 1.0**

CSI (0 of 60): score: **0.00%**
YES:0 NO:0 MAYBE:0

FORT 1.0 (0 of 60): score: **0.00%**
YES:0 NO:0 MAYBE:0

UNR

problems: 60
solvers: **CSI FORT 1.0**

CSI (0 of 60): score: **0.00%**
YES:0 NO:0 MAYBE:0

FORT 1.0 (0 of 60): score: **0.00%**
YES:0 NO:0 MAYBE:0

powered by StarExec

Tools & Categories

	TRS	CTRS	CPF		HRS	GCR	UN		
			TRS	CTRS			NFP	UNC	UNR
ACP	✓		✓						
ACPH					✓				
AGCP						✓			
CeTA			✓	✓					
CO3		✓							
CoLL-Saigawa	✓								
ConCon		✓		✓					
CSI	✓		✓				✓	✓	✓
CSI^ho					✓				
FORT						✓	✓	✓	✓
SOL					✓				
	new								

Cops

- Confluence problems
- Search & Query & Submission & Download
- Problem Selection
- Support for CTRSs
- Support for HRSs
- Support for MSTRSs

Problem Selection for CoCo 2017

- max. 100 random Cops
- CPF categories use same problems as regular ones
- oriented 3-CTRSs
- pattern systems for HRS
- non-confluent systems for GCR/NFP/UNC/UNR

2012: 125
2013: 261
2014: 425
2015: 492
2016: 521
2017: 758

Scoring

valid answers

YES/NO

regular categories

score is YES+NO

CPF category

score is sum of scores of component categories

UN category

$$\text{NFP} \Longrightarrow \text{UNC} \Longrightarrow \text{UNR}$$

	NFP	UNC	UNR	none
none	5	4	3	0
¬NFP	–	5	4	3
¬UNC	–	–	5	4
¬UNR	–	–	–	5

StarExec

Hardware

- nodes 1–32 (2 quad-core, 2.40 GHz, 128 GB)
- nodes 33–192 (2 quad-core, 2.40 GHz, 256 GB)

Software

- tool/benchmark submission/management
- tool execution
- tool pipelining
- queue management (CoCo queue has nodes 51–57)
- (some) statistics

And the Winners are . . .