

International Journal of Computer Science and Mobile Computing



A Monthly Journal of Computer Science and Information Technology

ISSN 2320-088X

IJCSMC, Vol. 3, Issue. 2, February 2014, pg.659 – 665

RESEARCH ARTICLE

SAT4BSC: A Static Analysis Tool for BPEL Source Codes

Esubalew Alemneh¹, Abdul Azim Abd Ghani², Rodziah Atan²

¹ Bahir Dar University, P.O.Box 26, Bahir Dar, Ethiopia

² Faculty of Computer Science and Information Technology, University Putra Malaysia (UPM)
Serdang, Selangor 43400, Malaysia

¹ esubalew@bdu.edu.et, ² {azim, rodziah}@fsktm.upm.edu.my

Abstract — Business Process Execution Language (BPEL) is Extensible Markup Language (XML) based language for describing the logic to orchestrate the interaction between Web services in a business process. Even though it is fairly new language it is getting popularity in various software industries and research environments. The emphasis of recent researches and developments on web services and on BPEL has been in their architecture and interface. However, the work regarding to tool support especially to compute the metrics and to draw control flow graph (CFG) is in its infant stage. Provision of tools to reckon measures has multitude of benefits. CFG is essential tool to analyze various properties of a source code and it is also useful for software testing, software measure, and software maintenance. In this research we have developed a static analysis tool which is dedicated to compute all available BPEL 2.0 metrics and draw CFG of its source code. The tool has been evaluated by various BPEL process source codes obtained from the languages specifications and from other research papers. The test shows that the tool can compute the metrics and draw the CFG effectively and efficiently.

Keywords— Static analysis; BPEL 2.0; BPEL Metrics; CFG

Full Text: <http://www.ijcsmc.com/docs/papers/February2014/V3I2201499a33.pdf>