Tutorial 2
Benchmarking Event Processing Systems:
Current State and Future Directions

Marcelo R. N. Mendes
CISUC, University of Coimbra
Dep. Eng. Informática - Polo II
Univ. de Coimbra, 3030-290
Coimbra, Portugal
+351 239790000
mnunes@dei.uc.pt

Pedro Bizarro
CISUC, University of Coimbra
Dep. Eng. Informática - Polo II
Univ. de Coimbra, 3030-290
Coimbra, Portugal
+351 239790000
bizarro@dei.uc.pt

Paulo Marques
CISUC, University of Coimbra
Dep. Eng. Informática - Polo II
Univ. de Coimbra, 3030-290
Coimbra, Portugal
+351 239790000
pmarques@dei.uc.pt

Categories and Subject Descriptors

C.4 [**Performance of Systems**]: Measurement techniques

General Terms

Design, Performance, Measurement.

Keywords

Benchmarking, Complex Event Processing

1. TUTORIAL OVERVIEW

Complex Event Processing (CEP) has attracted a lot of interest from academia and industry in recent years. It has been employed in a variety of domains (e.g. financial, healthcare, military) as a way of promptly detecting and reacting to the occurrence of certain events/situations of interest. However, as a relatively new area, many people are still unaware or unfamiliar with CEP.

The goal of this tutorial is therefore twofold: first to give a broad view of CEP to researchers and practitioners of the performance engineering community; second to share our experiences over the last months in the ambit of BiCEP, a research project at University of Coimbra that aims at devising standard benchmarks for CEP. We present the general principles behind the definition of benchmarks, the specific challenges and novelties found when benchmarking CEP systems, as well as the current state of the BiCEP project and its future directions. We also provide hands-on instruction on the FINCoS framework, a set of tools we have developed for carrying out experimental performance evaluation of CEP engines.

1.1 Tutorial Outline

Topics covered in this tutorial include:

1. Introduction to CEP

   - Overview and Applications;
   - Characterization: continuous queries, unbounded event streams, windowing, pattern matching, consumption policies, and available products;

   - Related Areas;

2. Benchmarking CEP Systems

   - General Principles;
   - Challenges and Peculiarities of CEP;

3. FINCoS Framework Overview

   - Design Considerations and Test Components;

4. Live Demo of FINCoS

   - Creating test setups, running performance tests, scaling up test components, computing performance metrics, and realtime performance monitoring.

2. PRESENTER

Marcelo Mendes is a PhD student at the University of Coimbra and a member of BiCEP, a research project aimed at analyzing, comparing and improving the performance and scalability of event processing systems. Formerly, Marcelo has worked as Software/Performance Engineer at the CIn-Itautec Performance Lab, where he got involved in several studies and activities concerning benchmarking, system sizing and capacity planning. His main research areas are Management of Data, Complex Event Processing, and Performance Engineering.

3. REFERENCES

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