

Oryx Engine: Internet-Scale Process Execution

Background and Introduction

The Business Process Technology group focuses on modeling, analyzing, enacting, and evaluating business processes. In 2006, a bachelor project started what became Oryx, an extensible business process modeling platform, www.oryx-project.org that is being used worldwide, today. In the last two bachelor projects, we created a Web 2.0 community platform for people to co-create, share, and discuss process models, www.bpmn-community.org, and integrated Oryx into Google Wave to enable real-time collaborative modeling with many people distributed worldwide, www.processwave.org.

In the *Oryx Engine* bachelor project, we go beyond process modeling and aim at running processes, that is, building a process execution platform in a highly scalable environment, the cloud. Traditional process execution engines are typically built as siloed applications with a transactional database at its base, running in a rather static infrastructure. Such architectures do not scale well in flexible environments. Cloud providers, such as Google, Microsoft, and Amazon, offer virtual server platforms that scale extremely flexible on demand. However, traditional process engines need to be adapted to benefit from this flexibility.

The partner for this bachelor project is the team behind Activiti, an open source process management platform from Alfresco Software, which has at its heart „a super-fast and rock-solid BPMN 2 process engine for Java“ and builds on five years of experience gained in the jBPM project at JBoss/Redhat. The students will interact directly with the project lead of Activiti, Tom Baeyens, who is the father of jBPM.

Objectives

In the first phase, the students will elaborate different use cases for internet-scale process execution. A set of supported processes will be created that embrace required features of the engine. In parallel, the students will research highly scalable and elastic software architectures and platforms, and develop novel software architectures for process engines.

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