

# Advanced Scheduling Plugins for Social Networking Events

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**Abstract.** This demonstration will showcase how to apply Constraint Programming (CP) for development of advanced scheduling plugins for business and personal events managed through the popular social utilities such Facebook or Google Apps. In particular, we will demonstrate a CP-based meeting scheduling plug-in for Google Calendar that enriches social event management tools with automatic scheduling facilities.

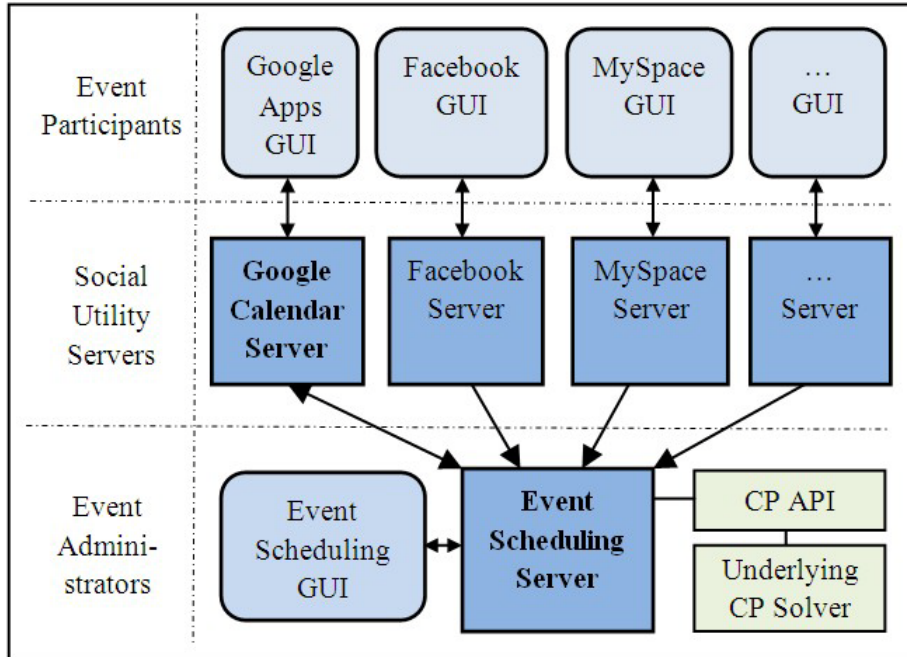
**Keywords:** Social Networking, Constraint Programming, Event Scheduling

## 1 Introduction

Modern social utilities such as Facebook or MySpace provide powerful web interfaces that help users to put events, meetings, and other common activities into shared calendars. However, people who create events such as meeting have to manually select a time and location which may or may not satisfy all participants. Manual meeting scheduling and rescheduling with repetitive renegotiations between different participants becomes the real problem when the social cooperation tools such as Google Calendar and Facebook Events are used for scheduling.

Automatic meeting scheduling with various temporal and resource constraints is one of the most studied area of Constraint Programming (CP). To integrate CP-based scheduling with social networking environment we proposed a generic architecture (see Fig. 1) for development of advanced scheduling components as plugins for different calendar tools. Today Google Calendar is dominating the online personal calendar space and is the only social tool that allows an external program to create new events, to read and modify the existing ones, and to broadcast changes to all interested parties. So, to demonstrate the proposed architecture, we have implemented a CP-based Meeting Scheduler as a plugin for Google Calendar. This plugin can also access Facebook Events allowing the scheduler to take into consideration real-life unavailability information for meeting participants who prefer to maintain their personal events on Facebook.

## 2 Architecture



**Fig. 1.** High-Level Integration Architecture

## 3 Implementation

The Meeting Scheduler uses mainly Java-based development tools to implement the three major components: Event Scheduling GUI, Event Scheduling Server, and Automatic Event Scheduler. To make the implementation neutral to different calendar and CP tools, we created a Meeting Scheduling API that allows a developer to express all business concepts and functions in generic terms without knowing a concrete implementation of social networks and CP solvers. The actual demo works with Google Calendar and utilizes the power of Java-based open source CP solvers such as Choco.

The implemented demonstration shows that the proposed approach for plugging scheduling components into modern social networks increases their usability by arranging meetings more easily without introducing a significant overhead to their scalability and efficiency.

**Acknowledgements:** This material is based upon works supported by Enterprise Ireland under Grant CFTD/06/209 and by the Science Foundation Ireland under Grant No. 05/IN/I886.