Concepts for WS-BusinessActivity framework implementation

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1. Introduction

This is a site of my student research project. I would like to thank my mentor Mas. Sc. Muhammad Farhat Kaleem for his support during the development of this project. Further I thank Dr. Markus Venzke and Boris Gruschko for their help and advices.

2. Abstract goal

The goal of my project work is developing of concept and strategies for implementation of transactional communication between web services. The content communication should be SOAP-based, containing the required transactional information and payload.

3. Concrete goal

First of all I split the abstract goal in two major tasks.

- Analyse of requirements and development of suitable concepts
- Building a sample implementation
- • Building a sample application without transactions
  - Implementing WS-Coordination Framework
  - Implementing WS-BusinessActivity Framework

3.1. Building a sample application

The sample application consist of some web services. I choose 'travaling agency' example for demonstration of transactional features of my work.
The application consist of a client and two web services: a traveling agency (the client), an airline (the webservice) and a hotel (another webservice).
For simplicity I deployed the webservices on one server and the client on another. The hotel and airline reservation systems has been implemented as trivial J2EE applications. The MySQL DB Server is used for data storage. The J2EE EJB encapsulate the data and the business logic.

3.2. Implementing WS-Coordination Framework

WS-Coordination specification defines entities and their interactions, needed for the coordinated activity. The Coordinator provides coordination services to applications, that want to participate in a coordinated activity. The Participant is service deployed on the site of business web service. An Initiator is mostly a client, willing a coordinated activity.

3.3. Implementing WS-BusinessActivity Framework

WS-BusinessActivity Framework defines two protocols that have to be implemented. It leverage the WS-Coordnation Framework by extending it to support business activities and puts some constraints on it.

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