A Taxonomy of Variability in Web Service Flows

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The Path

- Introduction
- Web Service Flows
- Variability points in WS-Flows
- Conclusions and Future Work
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Introduction

Reusability

Discoverability

Time-to-market

SOA

SPL

Web Services

Loose Coupling

Quality

Productivity

Stateless
Introduction

How handling variability through services?
Introduction

A taxonomy of variability in Web Service Flows

- Starting point for a base of knowledge about variability in WS-flows that can be later used for both:

  1. Evaluating the different mechanisms for implementing variability in WS-flows.

  2. Identifying factors that affect the selection of such variability mechanisms.
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Web Service Flows

- A Web Service Flow (WS-flow) is a composite Web service implemented using a process-based approach.

- Languages: WSCI, BPML, BPEL.
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Variability in WS-Flows

Service Invocation

Process Workflow Structure
Variability in WS-Flows

- **Partner Selection. Design-time VS Run-time**
Variability in WS-Flows

Service Invocation

- Partner Selection Criteria
  a) Evaluation Context. Hard-coded VS Delegated

b) Definition Time. Design-time VS Run-time
Variability in WS-Flows

Service Invocation

- **Message Exchange**
  - Synchronous VS Asynchronous

- **Protocols**
  - SOAP/HTTP
  - SOAP/JMS
  - XML/HTTP
Variability in WS-Flows

Service Invocation

- Service Invocation
  - Partner Selection
    - Binding Time
      - Design-time
        - User-Driven
      - Run-time
    - Partner Selection Criteria
      - Evaluation Context
    - Definition Time
      - Design-time
      - Run-time
  - Message Exchange
    - Synchronous
    - Asynchronous
  - Protocol
    - SOAP/HTTP
    - XML/HTTP
      - SOAP/JMS
      - SOAP/SMTP
Variability in WS-Flows

Process Workflow Structure

• Control Flow.
  • Task to be executed.
  • Execution order.

• Data Flow
  • Exchange of data between services.
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Conclusions and future work

• A starting point for a base of knowledge about variability in WS-flows.

• We focus on service invocation and workflow structure.

• Next step: Implementation technologies.

• Toward service-based implementation of business driven SPLs.
Thanks!

Can we improve this talk?
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