



TRAINING & CONSULTING

Web services (GSE NL)

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ABIS 2004

Document number: GSENL20041104cover.fm
25 November 2004

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Web services (GSE NL)

Objectives :

- **What is a Web Service ?**
- **How to wrap Cobol into a Web Service ?**
- **Best Practices**

What is a Web Service ?

1

W3C Definition

A Web service is a software system designed to support interoperable machine-to-machine interaction over a network. It has an interface described in a machine-processable format (specifically WSDL).

Other systems interact with the Web service in a manner prescribed by its description using SOAP-messages, typically conveyed using HTTP with an XML serialization in conjunction with other Web-related standards.

Web services (GSE NL)

1. What is a Web Service ?
2. How to wrap Cobol into a Web Service
3. Best Practices

Logical Evolution in Design

Structured Design

- Decomposing larger processes into smaller ones

Object-Oriented Development

- Incapsulating data and behaviour
- Fine-grained objects

Component-Based Development

- A small group of objects
- A contractually specified interface

Service-Based Development

- Late binding using an interface definition at compile time
- Web-based standards (HTTP to transfer XML)

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Web Service Technology

Transport

- **HTTP (not blocked by firewalls, connection- and stateless)**

Messaging

- **XML : Text-based structure using a specified character set**
- **SOAP : How to format and read an XML message**

Description

- **WSDL : Operations, Messages and Protocol**

Registry : UDDI : To dynamically discover and locate the WSDL

Service Composition : BPEL4WS : Specifying business flows

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Implementation Scenarios

Simple Service

- A small discrete function

Composite Service

- A combination of several functions

Middleware Service

- MOM : Message oriented middleware
- Third party binding using queues

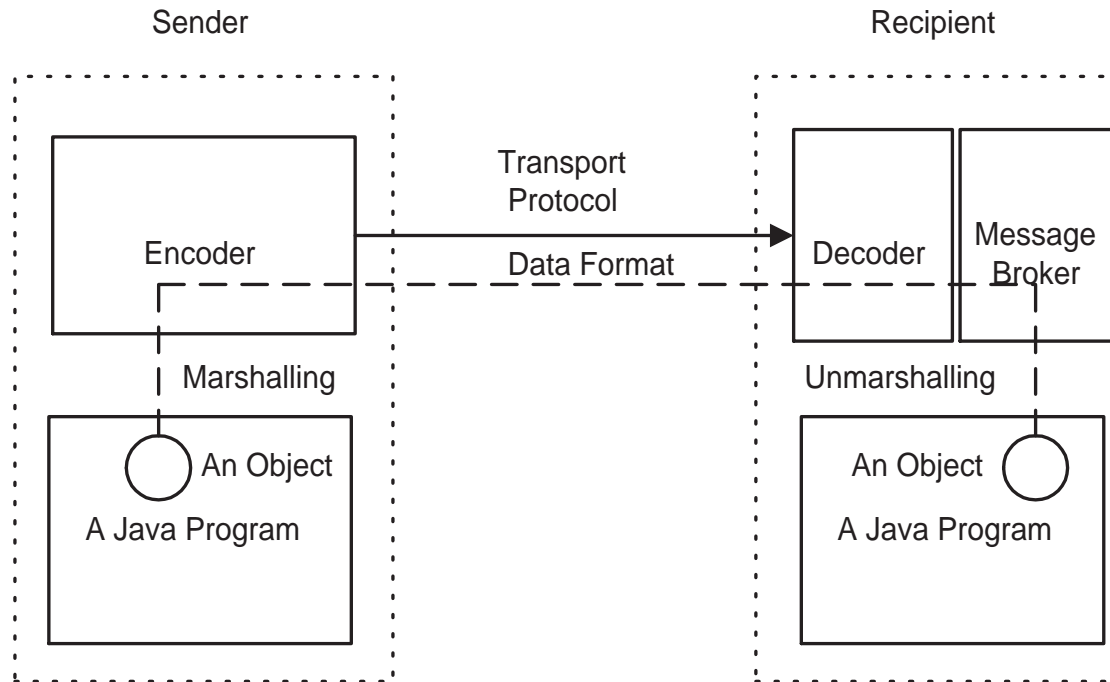
Service Bus

- Communication through a third party
- Multi-cast method of communication

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Web Service Deployment



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How to wrap Cobol into a Web Service

2

The Cobol part

The MQ part

The Web Service part

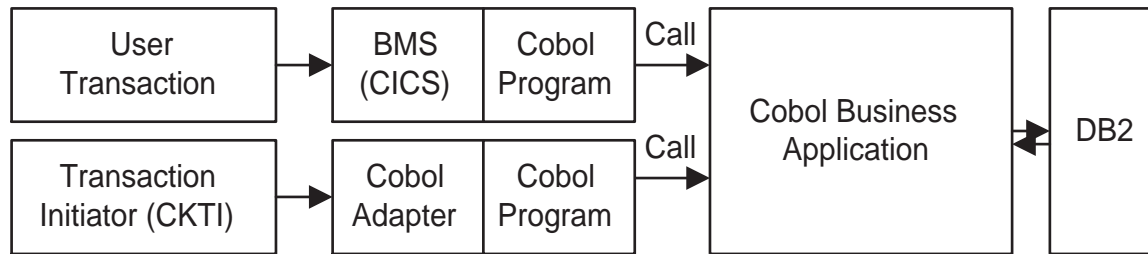
The Client part

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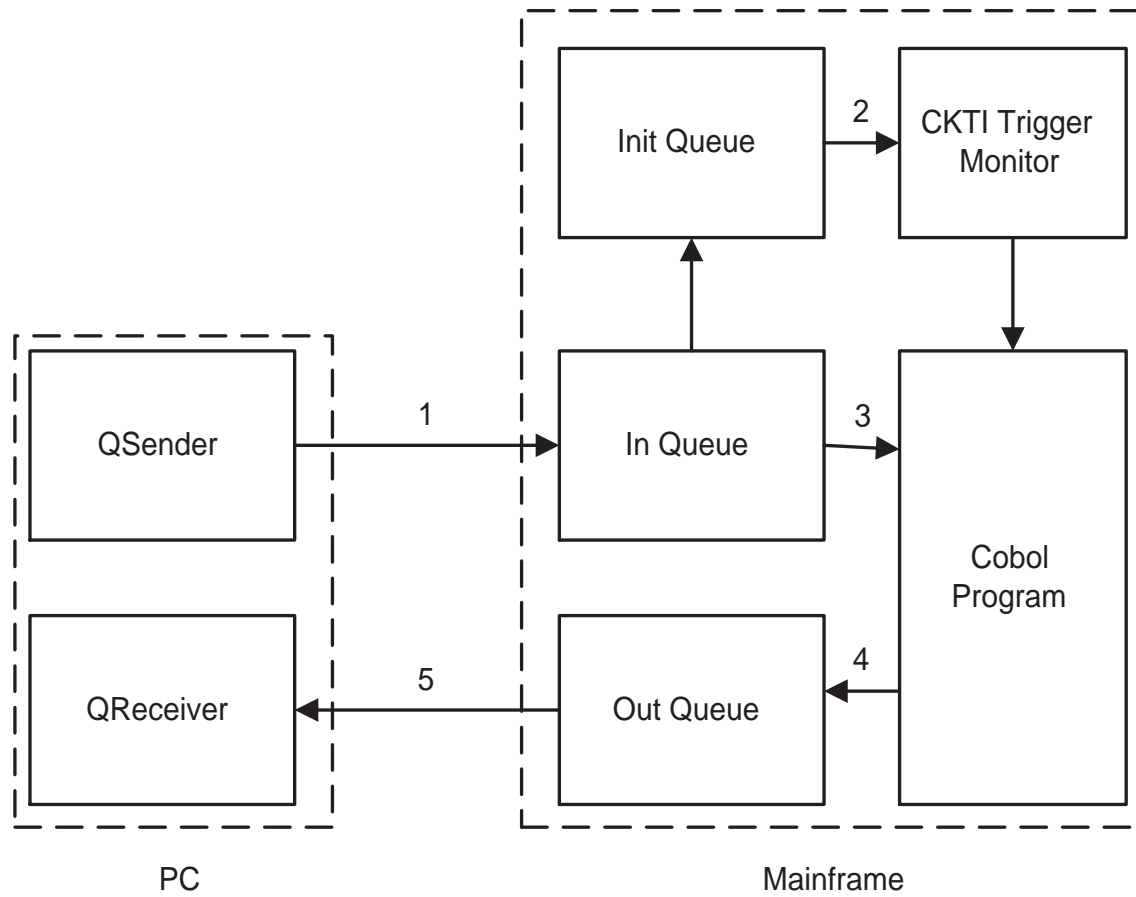


Model : The Cobol business Application

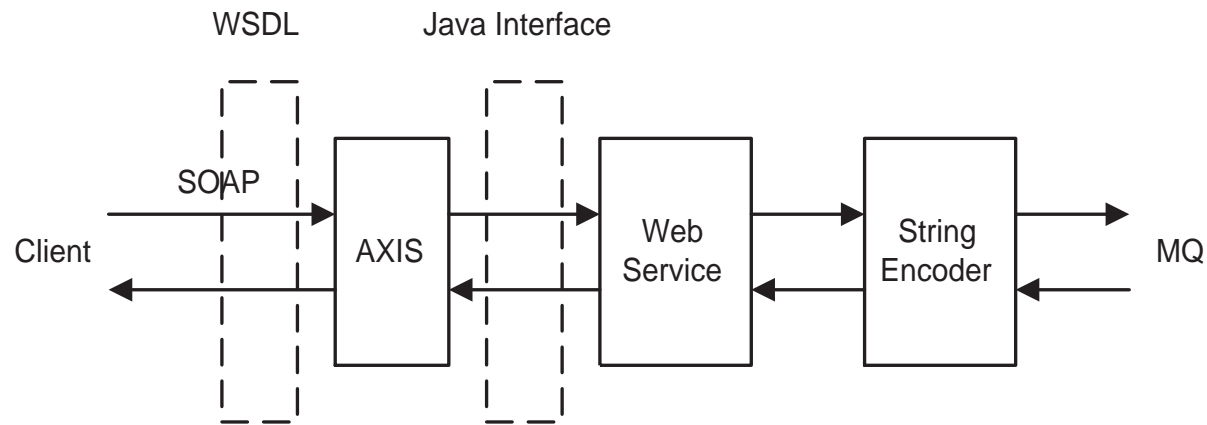
View : A CICS Screen / MQ

Controller : The Cobol program using the Cobol Adapter or BMS

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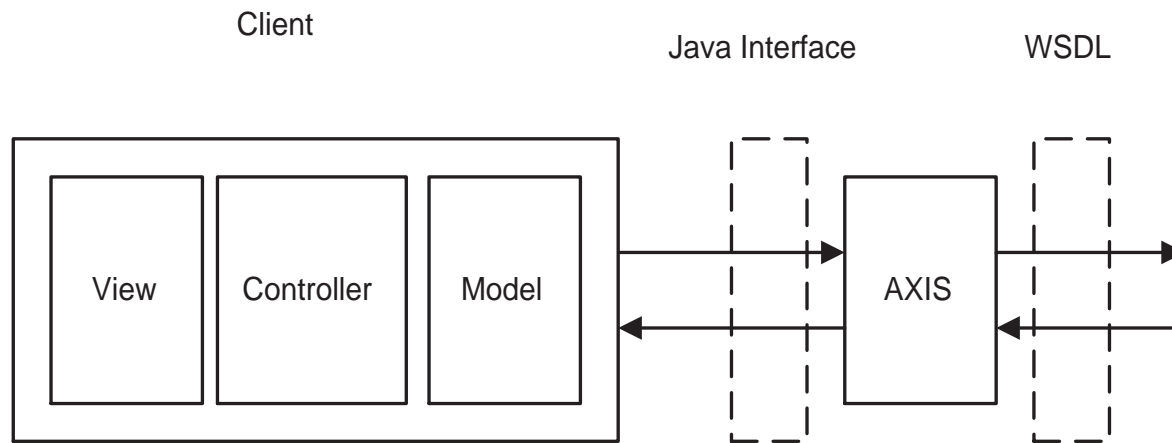
Model : MQ

View : The Client

Controller : The Web service

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Model : To hold state

View

- Swing Application
- HTML

Controller : manages the session

A good design (MVC) is necessary for the Cobol program

Every (CICS) Screen must represent one transaction

The request to a transaction can be multiple Java Beans

The reply from a transaction is a Java Bean

Every (Controller) level needs exception handling

WSDL is necessary for deploying the application

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