

# Our Research on Observatory Service Broker

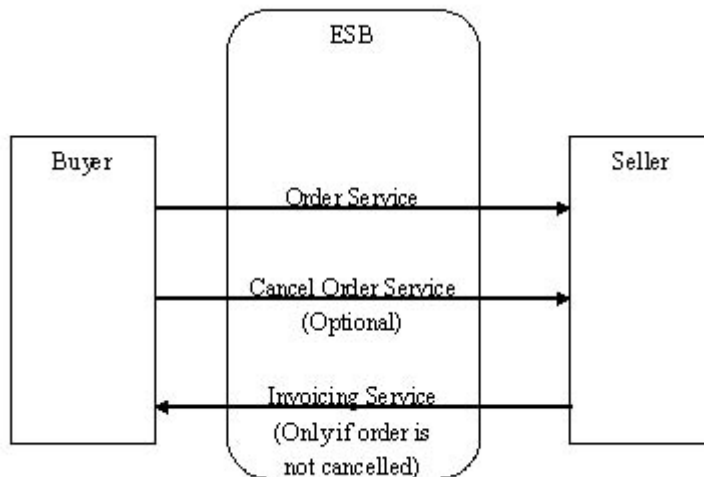
Posted on 31 Aug 2007

As we have discussed about some SOA concepts, in this document, we will try to describe our research in this area. We have developed a server called Observatory Service Broker (OSB), which is an Enterprise Service Bus (ESB) with business process monitoring features. This article will describe the basic idea of this server.

## Business Process Monitoring on ESB

As there are more and more services provided in the ESB, we can expect that there are more service calling through the ESB. Therefore, monitoring of service calls in the ESB is becoming increasingly important. In addition, the service calling should follow the business process defined by the business analyst. So, we need to have a way to monitor all those service calling, and even can guard against some illegal service calling if necessary.

For example, here is a simple business process:



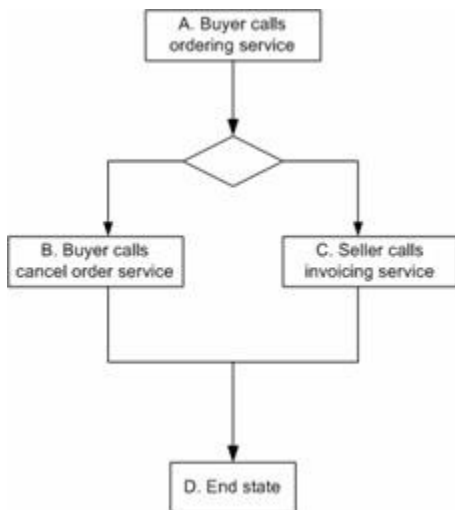
In the example above, we have to ensure that the invoicing service should not be called if the order is cancelled, or the cancelled order service should not be called if there is no order service called. Therefore, there is a need to monitor the service calls.

## Our Solution: Observatory Service Broker

As ESB is the middle layer between the service consumer and service provider, it is in the perfect position to monitor the service calling. Consequently, we developed the Observatory Service Broker (OSB), which is the ESB with a component called Business Process Keep Tracking System for business process monitoring.

## RuleSet : Format for expressing the business process

In order to monitor the business process, we must first have a way to express the business process. Therefore, we define a format called RuleSet, which contains a set of rules. Each rule represents a service call and also how the rule depends on other rules. For example, in the business process we mentioned above, the RuleSet is:



<b>Rules</b>	<b>Dependencies</b>
Rule A	None
Rule B	A is executed and C is not executed
Rule C	A is executed and B is not executed
Rule D	Either B or C is executed

The RuleSet file is in XML format for extensibility.

## Monitoring using the Ruleset

As we have the Ruleset for expressing the business process, we can monitor the service calls based on the Ruleset. Using our OSB, user can monitor the state of the business process, and whether there are errors occur. In addition, the OSB will block the service calls that are not following the Ruleset.

# OSB Manager

## Administration Console

Server View | [lpstinstance:rulesetid=rule\\_set\\_delivery\\_recipient,instanceid=GUID](#)

### Instance Information:

Instance ID	GUID
Ruleset ID	rule_set_delivery_recipient

### Rules and Status:

ID	Rule	Dependence	Looping dependence	Status
1	ANY SENDER -----> delivery-recipient-receive-advice( <a href="http://www.cecid.hku.hk/">http://www.cecid.hku.hk/</a> )	N/A	N/A	done
2	delivery-recipient-advise-receipt( <a href="http://www.cecid.hku.hk/">http://www.cecid.hku.hk/</a> ) -----> as2-sender-decision-if-item-rejected-of-seller( <a href="http://www.cecid.hku.hk/">http://www.cecid.hku.hk/</a> )	1(Done)	N/A	waiting
3	End	2(Done)	N/A	waiting

### Activity histories:

Id	Description	Time-stamp	Status	Remarks
1	as2-receiver-receive-advice-of-delivery-recipient( <a href="http://www.cecid.hku.hk/">http://www.cecid.hku.hk/</a> ) -----> delivery-recipient-receive-advice( <a href="http://www.cecid.hku.hk/">http://www.cecid.hku.hk/</a> )	Tue Aug 21 16:11:33 CST 2007	done	
2	Status Response for 1: done	Tue Aug 21 16:11:34 CST 2007	done	