BPEL

Oracle BPEL PM & JDeveloper

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What's BPEL

- BPEL is Business Process Execution Language or Web Services Business Process Execution Language
- A Business process modeling language
- A Process is a composite of web services
 - a package of web services
- programming in the large

block-structured
 (e.g. sequence, while, pick, scope, etc.)

- BPEL builds on the foundation of XML and Web services
- XML-based language
- standardize enterprise application integration

How to build a Business Process

- specifies the exact order in which participating Web services should be invoked, either sequentially or in parallel
- Structs: Conditional, Loops
- Define a complex business process by combining all these structs

How it works

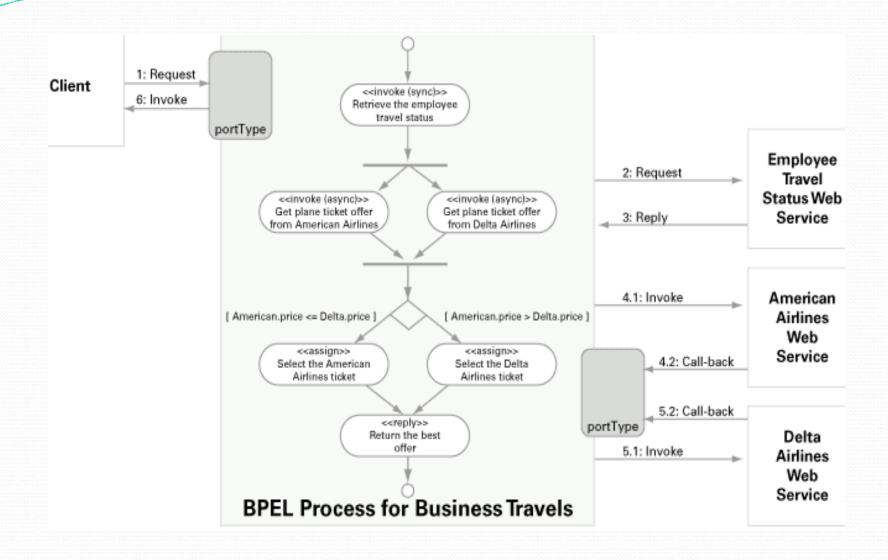
- business process receives a request
- Invoke web services
- Respond to the caller

Activities in BPEL

- <invoke> invoking other Web services
- <receive> waiting for the client to invoke the business process by sending a message
- <reply> generating a response for synchronous operations
- <assign> manipulating data variables
- <throw> indicating faults and exceptions
- <wait> waiting for some time
- <terminate> terminating the entire process

Structure Activities

- <sequence> allows us definition of a set of activities that will be invoked in an ordered sequence think about "{}"
- <flow> defines a set of activities that will be invoked in parallel
- <switch> implements branches"if... else..." or "switch... case..."
- <while> defines loops "for...", "do... while" or "while"
- <pick> selects one of several alternative paths



Develop

- Inventory the Involved Web Services
- Define WSDL for the BPEL Process
- Define Partner Link Types
- Create the Business Process
- Deploy and Test

Robustness

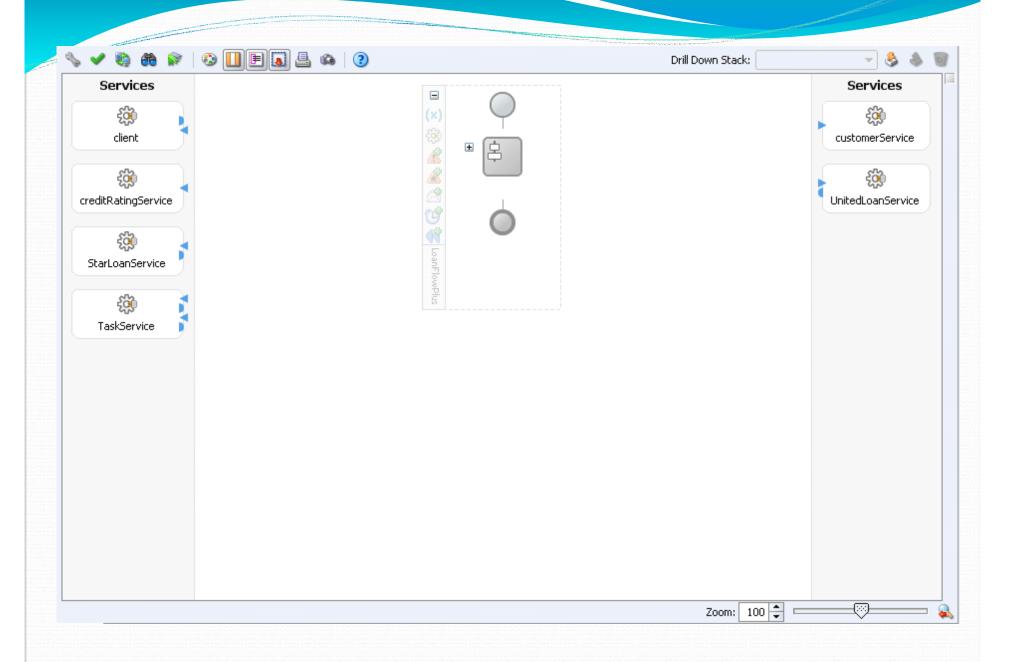
Fault Handling and Signaling

Benefits

 reducing the cost and complexity of process integration

Oracle BPEL

- Oracle BPEL Process Manager
 Oracle BPEL Process Manager offers a comprehensive
 and easy-to-use infrastructure for creating, deploying
 and managing BPEL business processes.
- http://www.oracle.com/technology/products/ias/bpel/ /index.html
- Jdeveloper 10.1.3.4
- http://www.oracle.com/technology/software/product-s/jdev/index.html
- Eclipse? Netbeans?



```
suppressJoinFailure="yes"
        xmlns="http://schemas.xmlsoap.org/ws/2003/03/business-process/"
        xmlns:wfcommon="http://xmlns.oracle.com/bpel/workflow/common"
        xmlns:bpws="http://schemas.xmlsoap.org/ws/2003/03/business-process/"
        xmlns:tns="http://samples.otn.com"
        xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        xmlns:wf="http://schemas.oracle.com/bpel/extension/workflow"
        xmlns:ora="http://schemas.oracle.com/xpath/extension"
        xmlns:taskservice="http://xmlns.oracle.com/bpel/workflow/taskService"
        xmlns:nsl="http://schemas.oracle.com/xpath/extension/ldap"
        xmlns:ns3="http://www.oracle.com/XSL/Transform/java/oracle.tip.pc.services.functions.Xpath20"
        xmlns:ns2="http://www.oracle.com/XSL/Transform/java/oracle.tip.pc.services.functions.ExtFunc"
        xmlns:bpelx="http://schemas.oracle.com/bpel/extension"
        xmlns:task="http://xmlns.oracle.com/bpel/workflow/task"
        xmlns:auto="http://www.autoloan.com/ns/autoloan"
        xmlns:services="http://services.otn.com">
<!-- ************************
        This process invokes a synchronous credit rating service (which
        throws NegativeCredit exceptions), then it invokes two asynchronous
        loan processor services in parallel and finally selects the best loan
        offer received and returns it (asynchronously) to its caller.
<partnerLinks>
 <partnerLink name="client" partnerLinkType="tns:LoanFlowPlus"</pre>
              partnerRole="LoanFlowPlusRequester"
              myRole="LoanFlowPlusProvider"/>
 <partnerLink name="customerService" partnerLinkType="tns:CustomerService"</pre>
              partnerRole="CustomerServiceProvider"/>
 <partnerLink name="creditRatingService"</pre>
              partnerLinkType="services:CreditRatingService"
              partnerRole="CreditRatingServiceProvider"/>
 <partnerLink name="UnitedLoanService" partnerLinkType="services:LoanService"</pre>
              myRole="LoanServiceRequester" partnerRole="LoanServiceProvider"/>
```

Demo

Useful Resource

- BPEL Cookbook
- http://www.oracle.com/technology/pub/articles/bpel _cookbook/index.html