

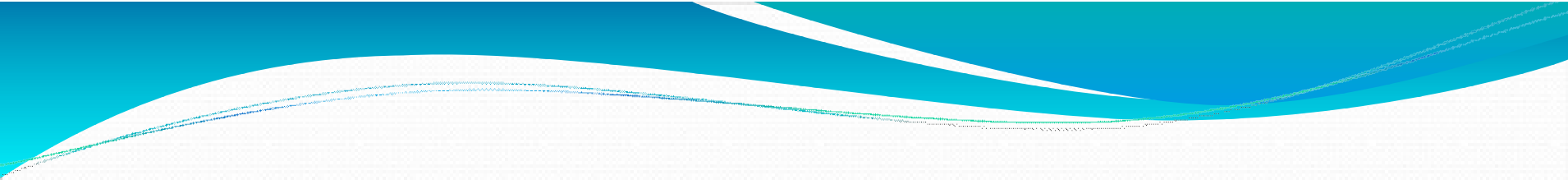
BPEL

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

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- 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

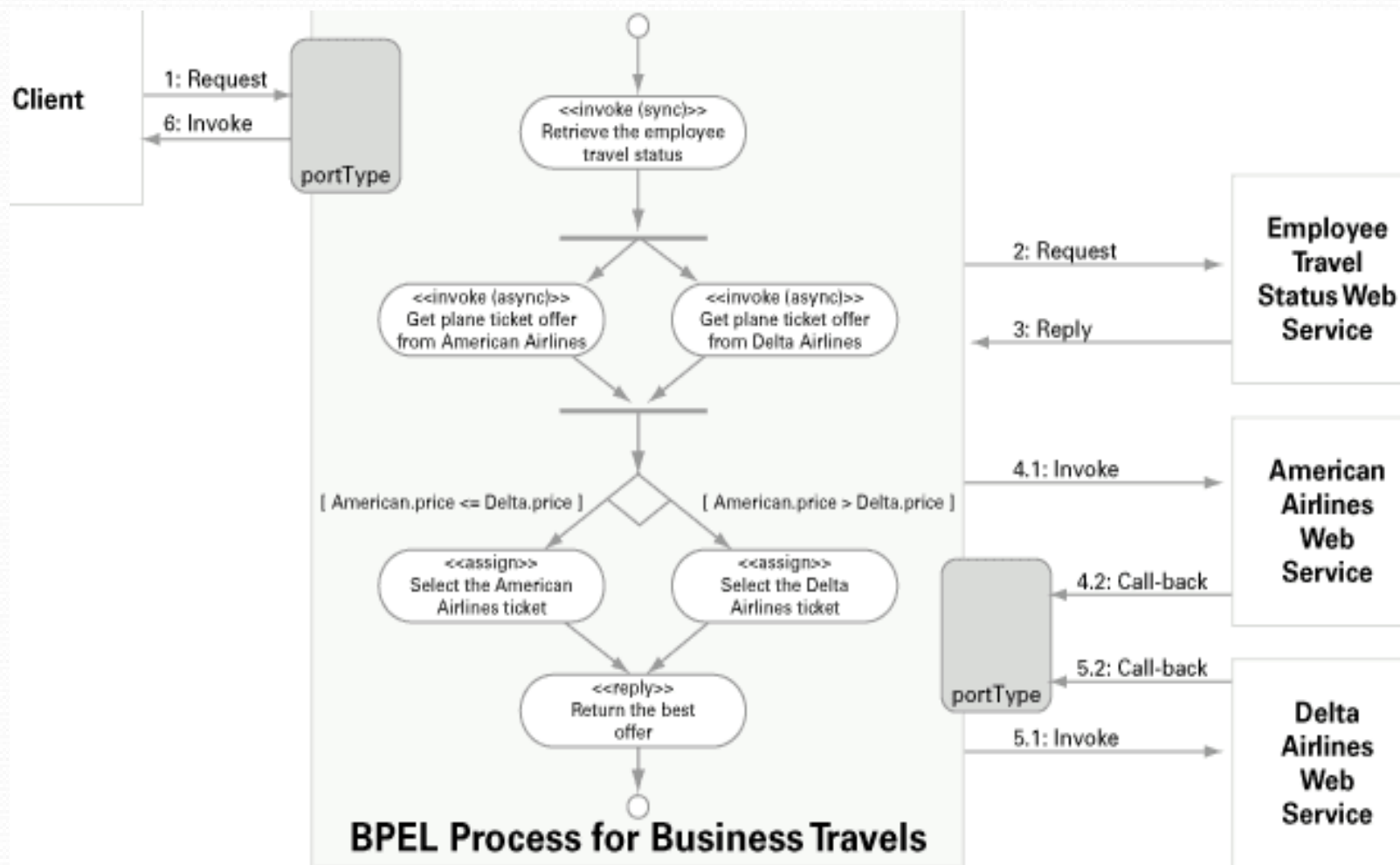
- business process receives a request
- Invoke web services
- Respond to the caller

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

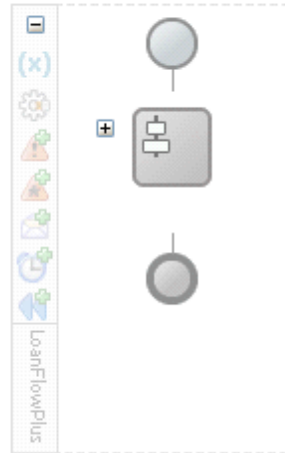
- Oracle BPEL Process Manager
Oracle BPEL Process Manager offers a comprehensive and easy-to-use infrastructure for creating, deploying and managing BPEL business processes.
- <http://www.oracle.com/technology/products/ias/bpel/index.html>
- Jdeveloper 10.1.3.4
- <http://www.oracle.com/technology/software/products/jdev/index.html>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





Drill Down Stack:   

Services

-  client
-  creditRatingService
-  StarLoanService
-  TaskService



Services

-  customerService
-  UnitedLoanService

Zoom: 100 

```

<process name="LoanFlowPlus" targetNamespace="http://samples.otn.com"
  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:ns1="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"
      partnerRole="LoanFlowPlusRequester"
      myRole="LoanFlowPlusProvider" />
    <partnerLink name="customerService" partnerLinkType="tns:CustomerService"
      partnerRole="CustomerServiceProvider" />
    <partnerLink name="creditRatingService"
      partnerLinkType="services:CreditRatingService"
      partnerRole="CreditRatingServiceProvider" />
    <partnerLink name="UnitedLoanService" partnerLinkType="services:LoanService"
      myRole="LoanServiceRequester" partnerRole="LoanServiceProvider" />

```



Demo

Useful Resource

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