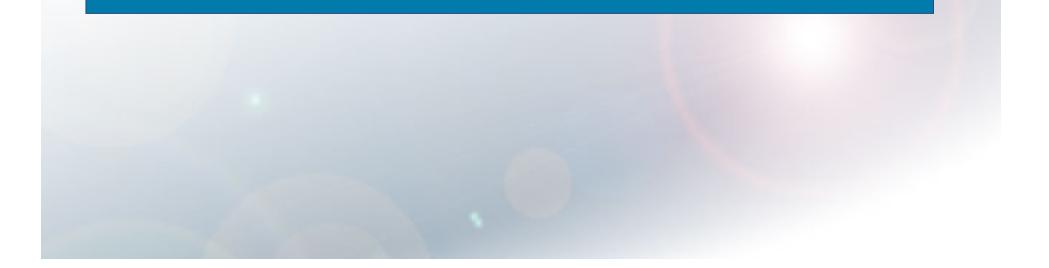
Introduction to Oracle WebLogic

Presented by: Fatna Belqasmi, PhD, Researcher at Ericsson



Agenda

- Overview
- Download and installation
- A concrete scenario using the real product
- Hints for the project



Overview



 Oracle WebLogic Web Server

 Oracle Workshop for WebLogic

Oracle WebLogic Web Server

- Is a Java Enterprise Edition (Java EE) application server
- Supports the deployment of many types of distributed applications
- Provides a standard set of APIs for creating distributed Java applications that can access a wide variety of services
 - Web Services

....

- Web applications (HTML, Java ServerPages-JSP, ..)
- Remote Method Invocation (RMI)
- Java Database Connectivity (JDBC)

Oracle WebLogic Web Server

- WebLogic Server 10.3 supports two types of Web Service APIs
 - Java API for XML based Remote Procedure Call (JAX-RPC)
 - Defines the Java APIs for making XML-based remote procedure calls (RPC)
 - Java API for XML based Web Services (JAX-WS)
 - Is a standards-based API for coding, assembling, and deploying Java Web Services
 - Is the successor to the JAX-RPC

Oracle WebLogic Web Server

- WebLogic Server 10.3 supports the following Web Service standards
 - JAX-WS 2.1
 - JAX-RPC 1.1
 - Web Services for Java EE 1.2
 - Web Services Metadata for the Java Platform 2.0 (JSR-181)
 - Web Services Description Language (WSDL) 1.1
 - Simple Object Access Protocol (SOAP) 1.1 and 1.2
 - Web Services Security (WS-Security) 1.1
 - Universal Description, Discovery, and Integration (UDDI) 2.0

Oracle Workshop for WebLogic

- Is a set of plug-ins to the Eclipse Integrated Development Environment (IDE) platform
 - Many of the standard features of the workshop are described in the Eclipse documentation, available at http://eclipse.org
- Allows quick and easy creation, deployment and testing of enterprise applications:
 - Web Services
 - Java
 - Web Applications
 - ...
- The applications can be deployed on a wide variety of servers, including
 - WebLogic Server
 - Tomcat,
 - JBoss, and others

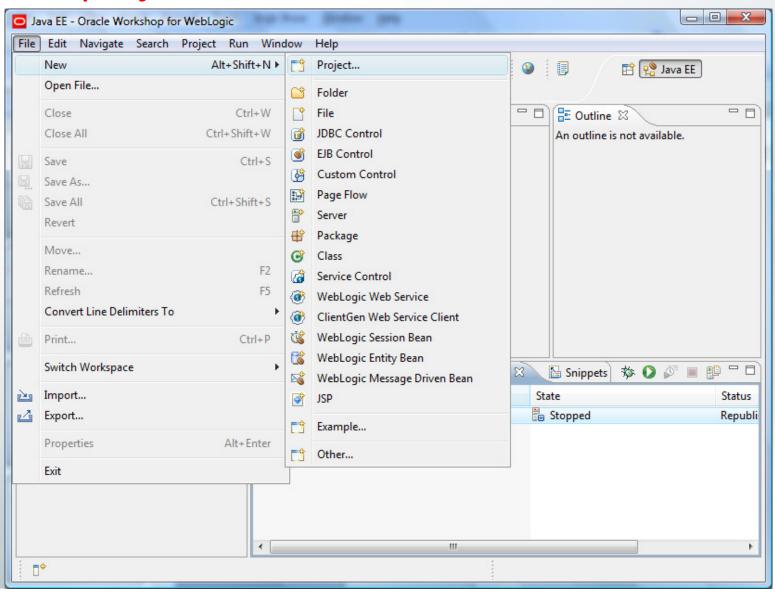
Download and installation

- Download
 - Free download with registration
 - http://www.oracle.com/technology/software/products/ias/bea_main.html
 - Accept the license agreement on the top of the page
 - Click the link:
 - "Oracle Workshop for WebLogic 10.3 Package Installer" OR
 - "Oracle Workshop for WebLogic 10.3 Net Installer"
 - Sign in or register if you are new
- Installation
 - Double click the downloaded file and follow the instructions
 - Documentations:
 - <u>http://e-docs.bea.com/wlw/docs103/index.html</u>
 - http://e-docs.bea.com/wls/docs103/webservices.html

A Concrete Scenario Using the Real Product

- A simple "Hello World" web service
 - Create a Web Service
 - Create project
 - Create package
 - Create a Web Service
 - Add a web service method
 - Add/start weblogic server
 - Create a domain
 - Start server
 - Deploy and test the Web Service
 - Run on server
 - Web logic test client
 - See SOAP, WSDL

Create a project



• Create a project

New Project	
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• Create a project

New Web Service Project
Web Service Project
Create a Web Service project in the workspace or at an external location.
Project name: HelloWorldProject
Project contents:
Use default
Directory: C:\bea\user_projects\workspaces\default\HelloWorldProject Browse
Target Runtime
Oracle WebLogic Server v10.3
Configurations
Annotated Web Service Facets JAX-RPC (Recommended) (v10.3)
Support for creating web services with the Web Services Metadata (JSR-181) standard. Additionally supports using WebLogic web service extensions, Apache Beehive Controls, and Apache XMLBeans.
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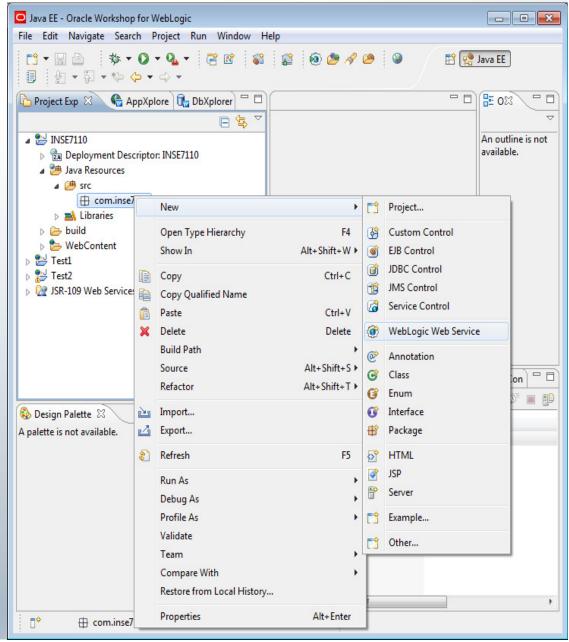
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- Create a Web Service
 - Specify the names and parameters of all of the service's exposed operations
- Steps
 - Create a WebLogic
 WS
 - Add the methods
 - Configure the methods' parameters



• Create a Web Service

New Web Service	_ • • ×
Web Service Create a new web service.	
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• Create a Web Service

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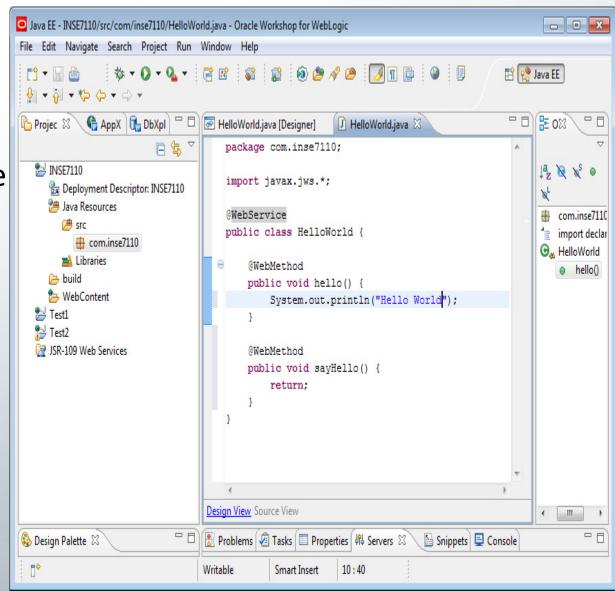
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• Create a Web Service

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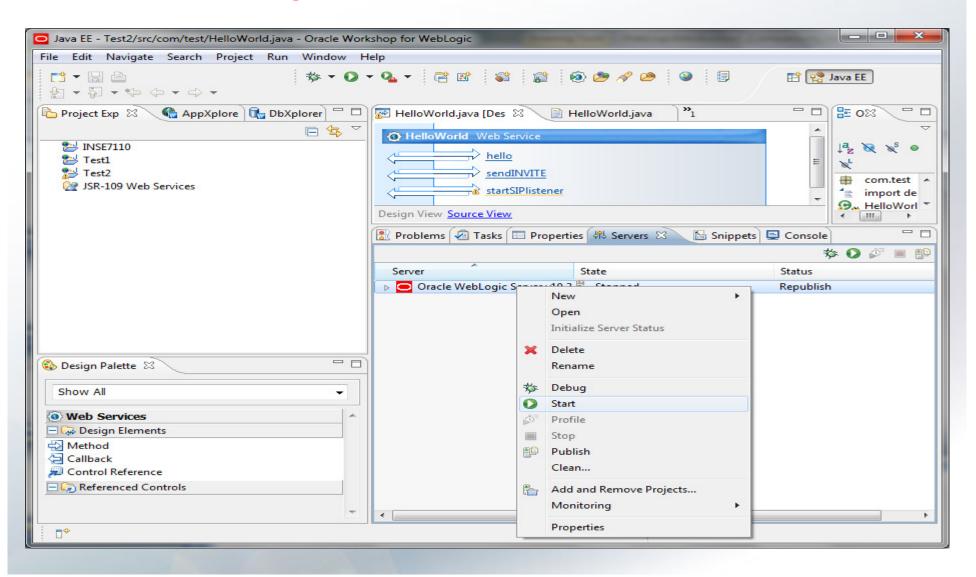
- Add the Web Service code
 - Implement the business logic of your Web Service
- Using both the Design and Source Views
- Programming language
 – Java



• Add a weblogic server

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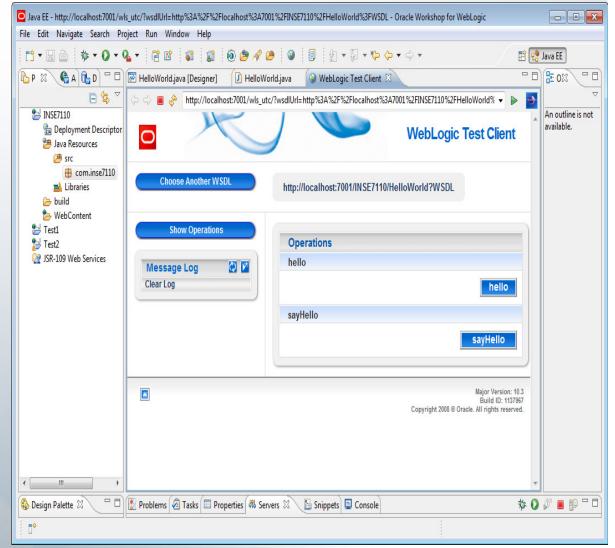
Start the weblogic server

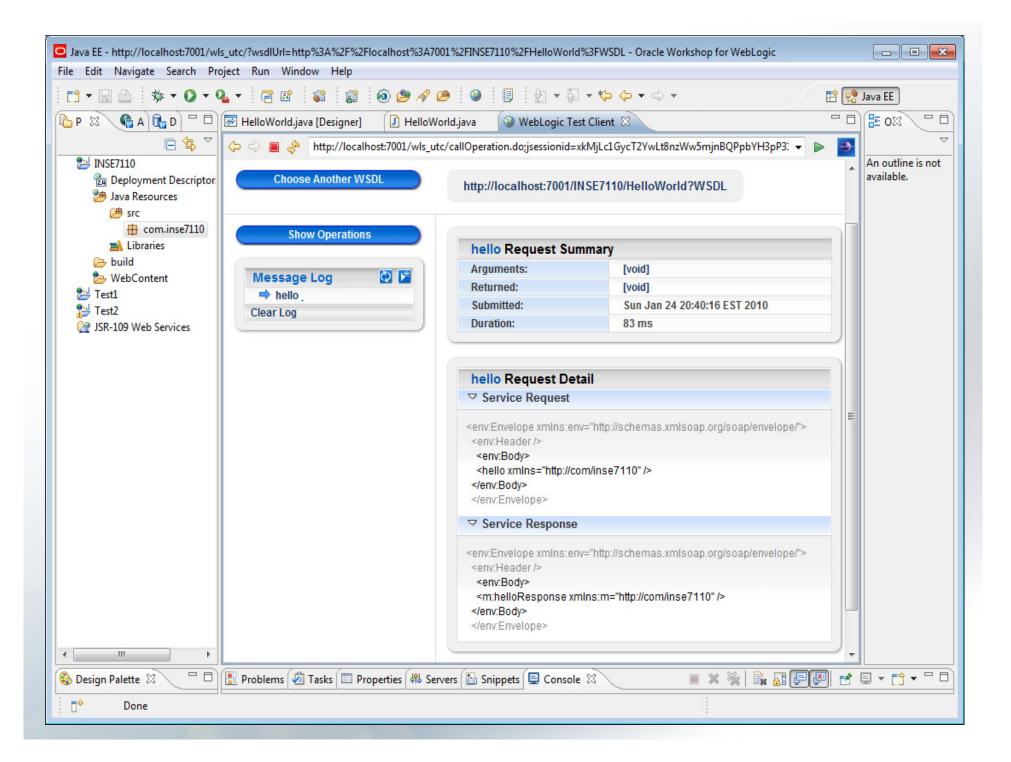


• Deploy a Web Service

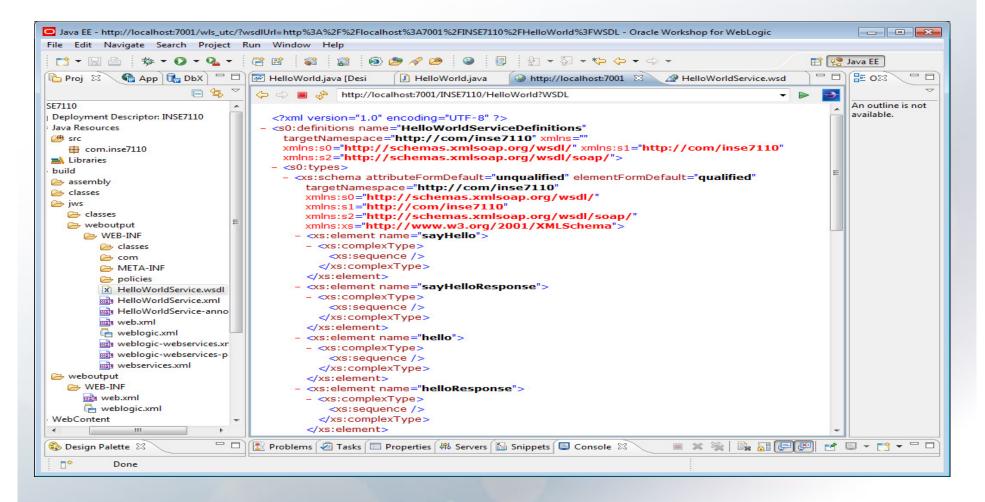
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- Test a Web Service
 - Using Test View
- Test View
 - Invoke a web service method from a browser
 - View the XML messages that are exchanged



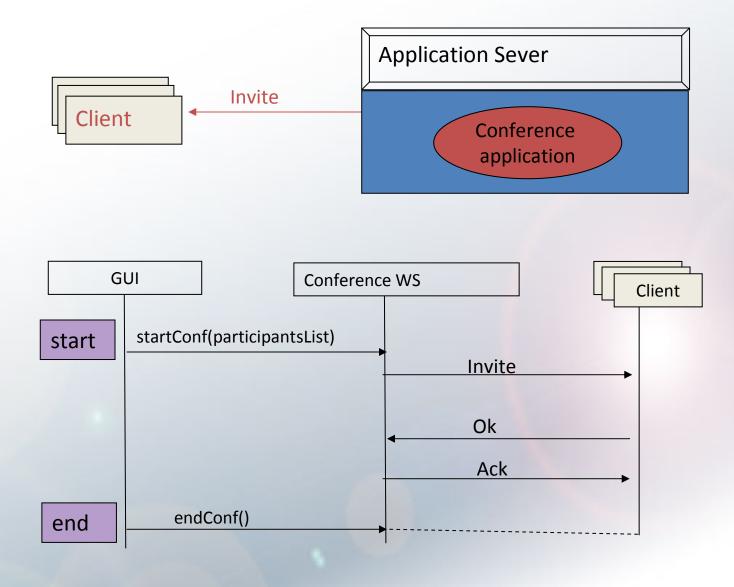


- View the WSDL file



Hints for the project

What to implement



Hints for the project

- Server side:
 - a conferencing web service that implements a simplified conference focus
 - uses SIP stack to listen to, receive, process and send SIP messages
 - Use JAIN SIP
- Client side: SIP client
 - Download or
 - Code your client using SIP stack
- Use of JMF for media

How to download JAIN SIP

- JSR 32 Jain SIP
- API doc and .jar can be downloaded at:
 - <u>http://jcp.org/aboutJava/communityprocess/mrel/jsr032/index.html</u>
 - Unzip
- Reference implementation .jar can be downloaded at:
 - <u>http://download.java.net/communications/jain-sip/nightly/</u>
 - Click: "jain-sip-ri/", you can find all nightly build implementations .jar
 - You can also find sdp implementations there...
- When implementing a web service using Jain SIP, put the two jar files (one api, one impl) into your project: \WEB-INF\lib
 - jsip_api_v1.2.jar
 - jain-sip-ri-1.2.xx.jar

- Tip: you may need log4j-xxx.jar if you always have running errors when using Jain SIP (this depends on which sip impl that you use)
 - <u>http://www.apache.org/dyn/closer.cgi/logging/log4j/1.2.15/apache-log4j-1.2.15.zip</u>

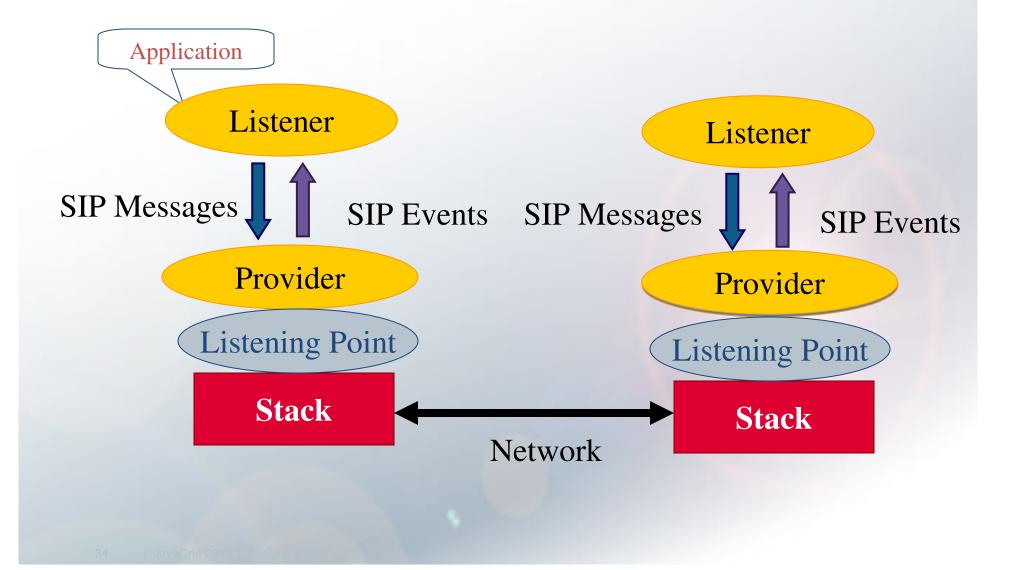
A brief introduction to JAIN SIP

- JAIN-SIP is a java-standard interface to a SIP signaling stack
- It provides a low level Java API specification for SIP Signaling
- It was designed for the developers who require fine grained access to the SIP protocol
- It can be used in:
 - Clients
 - Servers
 - Proxies
- JAIN SIP reference implementation is open source, very stable, and very widely used
 - Introduction to JAIN SIP
 - <u>http://www.oracle.com/technology/pub/articles/dev2arch/2007/10/introduction-jain-sip.html</u>

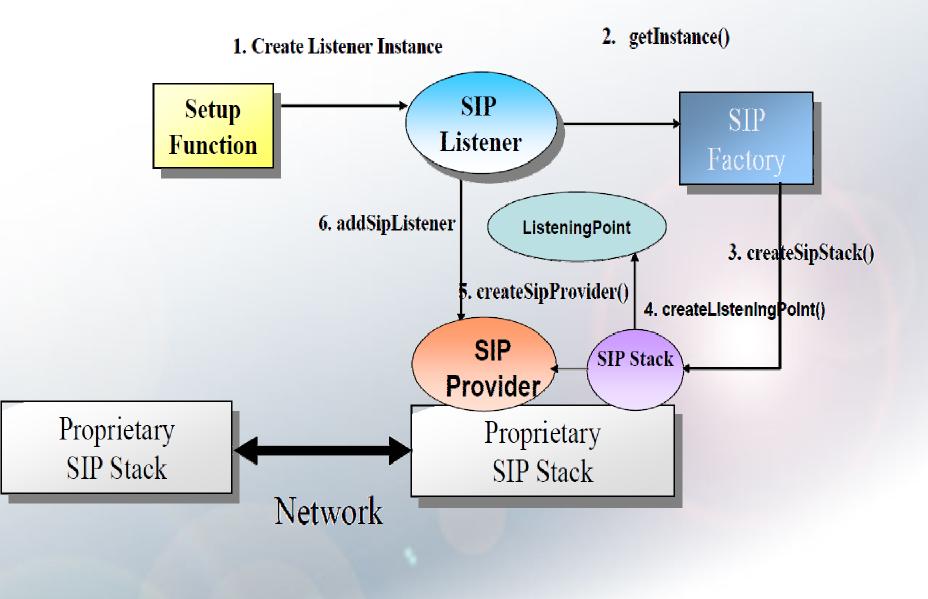
A brief introduction to JAIN SIP

- JAIN SIP services
 - Provides methods to format and send SIP messages
 - Parses incoming messages and enable the application to access the messages' fields via a standardized JAVA interface
 - Invokes appropriate application handlers when appropriate (message arrivals, transaction time-outs)
 - Provide Transaction support and manage Transaction state and lifetime on behalf of a user application.
 - Provide Dialog support and manage Dialog state and lifetime on behalf on a user application

JAIN SIP Architecture



A brief introduction to JAIN SIP



A brief introduction to JAIN SIP

Basic steps:

- **1. public class** MySipListener **implements** javax.sip.SipListener {...}
- 2. SipFactory sipFactory = SipFactory.getInstance();
- 3. SipStack sipStack = sipFactory.createSipStack(properties);
- ListeningPoint listeningPoint = sipStack.createListeningPoint(address, port, transport);
- 5. SipProvider sipProvider = sipStack.createSipProvider(listeningPoint);
- 6. sipProvider.addSipListener(mySipListener);

• Introduction to JAIN SIP

<u>http://www.oracle.com/technology/pub/articles/dev2arch/2007/10/introduction-jain-sip.html</u>

SDS or Web Logic ?

- Ericsson SDS:
 - Need to configure IMS first...
 - Can use SIP Servlet
 - Trigger: from SIP client or HTTP Servlet
 - Both need programming
 - Conference client registration: register to CSCF

- Oracle Web Logic
 - No configuration is needed
 - Can use SIP Stack (lower level of abstraction than SIP Servlet)
 - Trigger: from web logic test client or any web service that talks SOAP
 - The first option is provided by the tool, no need to code
 - Conference client registration: register to your SIP Listener (in your WS logic)
- What's in common:
 - Media handling: RTP/RTCP (JMF)
 - Conference client: SIP client that talks RTP

References

- http://download.oracle.com/docs/cd/E12840_01/wls/docs103/intro/chap1.html
- http://download.oracle.com/docs/cd/E12840_01/wls/docs103/webserv_intro/overview.htm l#choose
- http://download.oracle.com/docs/cd/E12840_01/wls/docs103/webserv_intro/standards.ht ml#wp1078494
- http://www.oracle.com/technology/products/workshop/index.html
- http://e-docs.bea.com/wlw/docs103/index.html
- http://e-docs.bea.com/wls/docs103/webservices.html
- http://www.oracle.com/technology/pub/articles/dev2arch/2007/10/introduction-jainsip.html

