

Going through

[http://docs.oracle.com/cd/E17904\\_01/integration.1111/e10224/fod\\_intro1.htm#CHDHGAEB](http://docs.oracle.com/cd/E17904_01/integration.1111/e10224/fod_intro1.htm#CHDHGAEB)

walkthrough SOA and BPEL Theoretically.

Post this will do sample of each activity without missing any single activity.

From the above link:

### **Need of SOA:**

Changing markets, increasing competitive pressures, and evolving customer needs are placing greater pressure on IT to deliver greater flexibility and speed. Today, every organization is faced with predicting change in a global business environment, to rapidly respond to competitors, and to best exploit organizational assets for growth. In response to these challenges, leading companies are adopting service-oriented architecture (SOA) to deliver on these requirements by overcoming the complexity of their application and IT environments.

SOA provides an enterprise architecture that supports building connected enterprise applications to provide solutions to business problems. SOA facilitates the development of enterprise applications as modular business web services that can be easily integrated and reused, creating a truly flexible, adaptable IT infrastructure.

### **What's Special about it:**

SOA separates business functions into distinct units, or services. A SOA application reuses services to automate a business process.

A standard interface and message structure define services. The most widely used mechanism are web services standards. These standards include the Web Service Description Language (WSDL) file for service interface definition and XML Schema Documents (XSD) for message structure definition. These XML standards are easily exchanged using standard protocols. Because standards for web services use a standard document structure, they enable existing systems to interoperate regardless of the choice of operating system and computer language used for service implementation.

When designing a SOA approach, you create a service portfolio plan to identify common functionality to use as a service within the business process. By creating and maintaining a plan, you ensure that existing services and applications are reused or repurposed whenever possible. This plan also reduces the time spent in creating needed functionality for the application.

Oracle SOA suite provides complete set of service infrastructure components for designing, deploying and managing composite applications. Oracle SOA suite enables to create service, manage and orchestrated into composite applications and business processes.

Oracle SOA Suite plugs into heterogeneous IT infrastructures and enables enterprises to incrementally adopt SOA.

**Oracle SOA Suite capabilities:**

- 1) Messaging
- 2) Service Discovery
- 3) Orchestration
- 4) Webservices management and security
- 5) Business rules
- 5) Events framework
- 6) Business activity monitoring.

## **1.4 Standards Used by Oracle SOA Suite to Enable SOA**

Oracle SOA Suite puts a strong emphasis on standards and interoperability. Among the standards it leverages are:

- Service Component Architecture (SCA) assembly model
- Provides the service details and their interdependencies to form composite applications. SCA enables you to represent business logic as *reusable* service components that can be easily integrated into any SCA-compliant application. The resulting application is known as a SOA composite application. The specification for the SCA standard is maintained by the Organization for the Advancement of Structured Information Standards (OASIS) through the Open Composite Services Architecture (CSA) Member Section:
  - <http://www.oasis-opencsa.org>
- Service Data Objects (SDO)
- Specifies a standard data method and can modify business data regardless of how it is physically accessed. Knowledge is not required about how to access a particular back-end data source to use SDO in a SOA composite application. Consequently, you can use static or dynamic programming styles and obtain connected and disconnected access.
- Business Process Execution Language (BPEL)
- Provides enterprises with an industry standard for business-process orchestration and execution. Using BPEL, you design a business process that integrates a series of discrete services into an end-to-end process flow. This integration reduces process cost and complexity. BPEL versions 1.1 and 2.0 are supported.
- XSL Transformations (XSLT)
- Processes XML documents and transforms document data from one XML schema to another.

- Java Connector Architecture (JCA)
- Provides a Java technology solution to the problem of connectivity between the many application servers in Enterprise Information Systems (EIS).
- Java Messaging Service (JMS)
- Provides a messaging standard that allows application components based on the Java 2 Platform, Enterprise Edition (Java EE) to access business logic distributed among heterogeneous systems.
- Web Services Description Language (WSDL) file
- Provides the entry points into a SOA composite application. The WSDL file provides a standard contract language and is central for understanding the capabilities of a service.
- Simple Object Access Protocol (SOAP)
- Provides the default network protocol for message delivery.
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**Over the Web:**

Got this link of samples on some of activitiy but it is on eclipse, we can use this if needed for reference

[http://www-inf.int-evry.fr/cours/WebServices/TP\\_BPEL/ifelse.html](http://www-inf.int-evry.fr/cours/WebServices/TP_BPEL/ifelse.html)