Abstract—Web service with SOA architecture is the mostly used word in the IT industry. SOA is a powerful distributed computing system provides the logic of divide the business processes into services with the intention of promoting the reusability. It converts the business process into loosely coupled services to integrate the Enterprise applications to reduce the IT Burden and increase the ROI. SOA platform is more popular and widely used in the distributed systems with the challenge of setting up the environment and integration, this study has been carried out to setting up the web service environment and creation of the services using SOA architecture. SOA Principles and the Open Software Tools are used in this study.

Keywords—Service Oriented Architecture (SOA); Webservices, Jboss, CXF

I. INTRODUCTION
Service Oriented Architecture (SOA) & Web services are the emerging technology used in the IT industry. This study talks about the Service Oriented Architecture, Web service with SOA and the creation of web service using CXF.[1] Service Oriented Architecture is an architectural model that enhances the agility, cost effectiveness and reduce the IT burden. SOA supports the service oriented computing. Service is a unit of solution. Service serves as an Individual component and achieves the strategic goals of an organization by reusing the service. In SOA services are Created, Executed and Evaluated. The services are classified into Business services, Application services and Infrastructure services. Services are aggregated and achieved the business process. These services are exposed as a web service to access it from anywhere. The meta information about the services are documented as WSDL definition, which is nothing but the XML schema. In Web services the service functions are referred as service operations. This web service can be designed using the Open Software tool called Apache CXF. CXF is Celtix and XFire communities. CXF has much friendlier experience and easy to integrate with the spring framework.

In this paper section 2 & 3 we have discussed about service entities and web services. In section 4 and 5 we have introduced a new web service creation and web access. In section 6 and 7 have given conclusion and future enhancements. Finally in section 8 we have given references.
access the consumer. After the execution, the service provider sends the response to the service consumer according to the contract output. Service registry is a place where all the services are registered, so that the consumer can go and check the available services in an organization. It provides reusability. The tools are provided to enable the services to be modeled, created and stored. Programmers are given access to find out the services and also given the alert if any changes happen in the registry. Service contract specifies the request format and the response format with the preconditions and the post conditions. The amount of time the service takes to execute the method also specified as Quality of Service. The service lease is used for the number of years the consumer can use the service. Once the lease is over the consumer must request a new lease in the service registry. Orchestration is linking the services to achieve the business processes. This allows the processes to be declared in business flow. It has the ability to define and model the processes and analyze them to understand the impacts of any changes. This supports for monitoring and management capabilities at the process level. The life cycle of SOA is Gather the requirements, Construct, test, integrate the people process Information and manage the application services. The Elements of SOA is Service, provider, Requester and Directory. In this model the service provider publishes the service based on the WSDL contract in the Service Registry. The service consumers discover the service using the end point URL with the request SOAP message. Messaging enables the service to communicate and interact with multiple platform, it is connection independent and it has the intelligent routing capability.[4]

3. WEB SERVICES

Web services are a software program which is identified by the Uniform Resource Locator. The interfaces and the bindings are defined using XML. Its definition can be discovered by other systems. Those systems interact with the web services in the specified definition using SOAP. The characteristic of web services are, it is platform, location, implementation and format independence. This has three things. Discovery is the one which search where the service is. Description is the one which says how the service should be used and Messaging is the one which says the communication. Web service is using UDDI for the discovery, WSDL is used for the Description and SOAP is used for the messaging to communicate. Simple Object Access Protocol is a specification describing how to provide parameter to a service and how to receive the response result from the service. This specifies the information in a XML Schema. Web service Description Language is a standard way to specify the service. The operations of the services are provided in the WSDL and also what are the arguments needed for the operation to execute. Address with the port number is specified to locate the service. UDDI is Universal Description Discovery and Integration is a platform framework for describing the services, discovering the business and integrating the business services. It stores the information about the services. It is actually a directory of web services described by the WSDL. To implement the web service concept, the environment needs to be set up. Once the environment is ready, the services can be written and published in the server. The services can be developed by using Top down or Bottom up approach. In our study the Top down approach is followed. Once the service is published the service can be accessed from the different systems. In market different models are used to create the web services. One of them is CXF. In our study we are using CXF.[3,5]
3.1. Web Service environment configuration

For creating the web service the environment needs to be set up. Following are the software’s are used for setting up the environment.

**Application Server**: jboss 5.1.0 GA

**IDE**: Eclipse – jee – helios – SR2 – win 32

**Web service Model**: apache-cxf-2.3.4

**Server with CXF Integration**: jbossws-cxf-3.4.0.GA

**Build tool**: apache-ant-1.8.2

**Testing tool**: SOAP UI 3.1.6

**STEP 1: USER ENVIRONMENT VARIABLE SETTINGS.**

Go to Windows -> Properties -> Advanced -> Environment Variables

Set the following environment variables

- CXF-HOME
- ANT-HOME
- JAVA-HOME

**STEP 2: CONFIGURING JBOSSWS-CXF-3.4.0.GA**

Change the ant.properties.examples into ant.properties in jbossws-cxf-3.4.0.GA folder and edit it in line number 6.

jboss510.home = “Path where the jboss is installed”

Run the ant command by using the following command

ant deploy –jboss 510

Check if it is successfully build

**STEP 3: CONFIGURING ECLIPSE IDE**

Setting up the CXF path

Go to Windows -> preferences -> webservice -> cxf2.x preference

Give the root directory of CXF

**STEP 4: CONFIGURING THE JBOSS SERVER**

Go to Windows -> preferences -> webservice -> server and runtime

Select jboss V5.0 server runtime Select Apache CXF2.X for webservice run time
4. WEB SERVICE CREATION
The precondition is JBOSS server should be up and running.
Go to File -> new -> Dynamic web project
Select Apache CXF2.x
Copy the WSDL under the webcontent folder.
Right click on the wsdl -> new -> other -> webservice
Click next -> next -> Finish.
Rename beans.xml created in project->webcontent->web-inf as beans-delta.xml.

Change the value of parameter contextConfigLocation to WEB-INF/beans-delta.xml in web.xml at project->webcontent->web-inf.
.ear file will be created and deployed in the JBOSS server.
To check the .ear is deployed properly or not , use the following steps.
Go to InterfaceImpl.java class and take the wsdl path and run it in the internet explorer.
It should show the wsdl in the internet explorer.

5. WEB SERVICE ACCESS
Go to SOAP UI and create a new project by selecting
the above WSDL.
Right click and create a new request.
Replace the ? with the proper value.
Run the request with the below address.
Check the server log about the status.

6. CONCLUSION
This study talks about setting up the web service environment, develop the code and deploy the war file in the application server. There are lots of needs to be done in the web service configurations like ESB configurations and JMS configurations etc.

7. FUTURE ENHANCEMENT
In the future environment, we shall concentrate configuring the ESB environment and implement the concept of ESB in JBOSS and with security. And also we shall improve the SOA Governance and SOA design patterns.

8. REFERENCES
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