

SOA-ESB and Lifecycle of projects

ESB

- It is “flexible connectivity infrastructure for integrating systems, applications and services to power your SOA.”
- ESB provides fundamental services for complex architectures via an event-driven and standards-based messaging engine (the bus).
- **Why need ESB (from wiki)?**
 - services are generally autonomous and availability of a service at a certain moment of time cannot be guaranteed.
 - It reduces the number of point-to-point connections between communicating applications.
 - It is easier to monitor for failure and misbehavior in highly complex systems and allows easier changing of components.
 - Every client directs all its requests through the ESB instead of passing it directly to a potential server.
 - This indirection allows the ESB to monitor and log the traffic

Features of ESB

- management capabilities

1. ROUTING messages between services
2. CONVERTING transport protocols between requestor and service
3. TRANSFORMING message format between requestor and service
4. Handling BUSINESS EVENTS from disparate sources

- quality-of-service support

1. reliability
 2. fault-tolerance
 3. security
- connectors for a broad range of technologies (such as J2EE and .NET components, messaging middleware, legacy applications, and TP monitors)

Services supported by ESB

- Mediation Services
 1. Routing
 2. Transformation
- Event Services
 1. Publish and Subscribe
- Transport Services
 1. Synchronous/Asynchronous
 2. Persistent/Non-persistent
 3. Loosely-coupled/Tightly-coupled

Mediation Services

- Mediation Capabilities
 - Transformations: XML-to-XML translations
 - Message Validation
 - Content and quality service selections
 - Content based routing
 - Customized logging, metering & monitoring
 - Policy management

ESB Implementation

1) Java Business Integration (JBI):

Provides standard interfaces for integration components and protocols to plug into. JBI is based on JSR 208 (an extension of Java 2 Enterprise Edition (J2EE) and is specific for JBI

Service Provider Interfaces (SPI)).

2) Open ESB

It is an open-source implementation of JSR- 208 (JBI).

3) WSO2 and Sevicemix (from apache) are also available