

J2EE and Struts in design phase of DECA

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1. INTRODUCTION

This document is intended to describe the use of Java 2 Platform Enterprise Edition framework (J2EE) in Document Commenting, Editing and Analysis System (DECA) developed by DevTeamware.

2. JAVA 2 ENTERPRISE EDITION (J2EE)

The Java™ 2 Platform, Enterprise Edition (J2EE) defines the standard for developing multitier web-based applications. J2EE bases applications on standardized, modular components, by providing a complete set of services to those components, and by handling many details of application behavior automatically, without the developers having to worry about implementing them. J2EE multitier approach is illustrated in figure 3-1.

J2EE takes advantage of many features of the Java 2 Platform, such as platform independency, JDBC database access and a security model that protects data even in internet applications. Java 2 Enterprise Edition adds full support for Enterprise JavaBeans (EJB) components, Java Servlets, JavaServer Pages and XML technology.

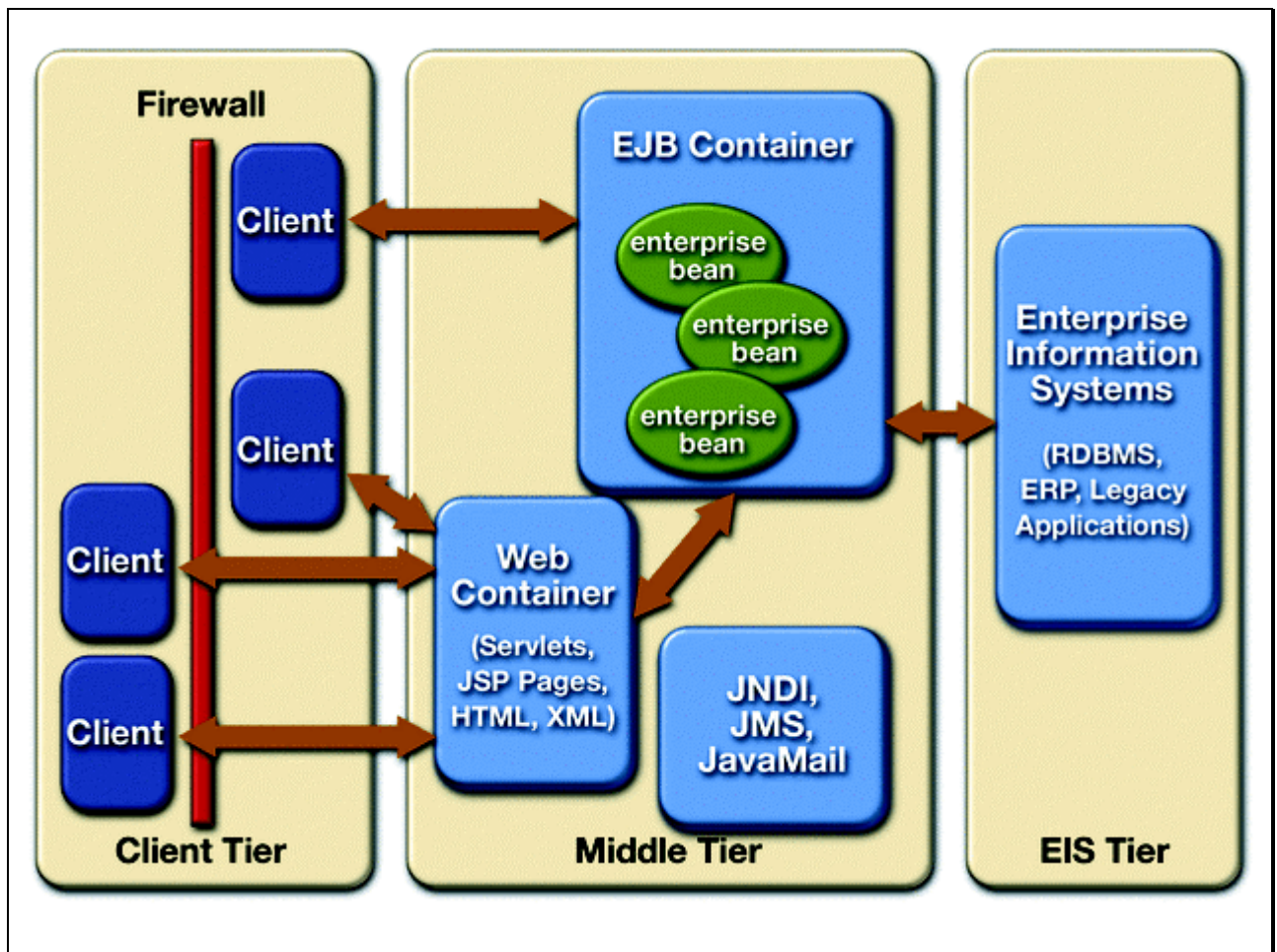


Figure 2-1. J2EE multitier model

3. JAKARTA STRUTS

Struts is an open source framework useful in building web applications with Java Servlet and JavaServer Pages (JSP) technology. Struts encourages application architectures based on the Model-View-Controller (MVC) design paradigm.

Struts includes the following primary areas of functionality:

- A controller servlet that dispatches requests to appropriate Action classes provided by the application developer.
- JSP custom tag libraries, and associated support in the controller servlet, that assists developers in creating interactive form-based applications.
- Utility classes to support XML parsing, automatic population of JavaBeans properties based on the Java reflection APIs, and internationalization of prompts and messages.

4. APPLYING J2EE AND STRUTS IN THE DESIGN PHASE OF DECA

4.1 J2EE

Due to the multitier nature of the J2EE framework, it was natural that further design followed the same approach. This approach generated the layered structure of the DECA core functions. This layers include database layer, which represents the information storage. Factory layers extract the data from the database layer. Filter layers are used to suppress and limit the amount of data visible to the user interface.

4.2 Jakarta Struts

Java technologies give developers a serious boost when creating and maintaining applications to meet the demands of today's public Web sites and enterprise intranets. Struts combines Java Servlets, Java ServerPages, custom tags, and message resources into a unified framework. This framework provides a co-operative platform which is very useful in projects such as DECA where multiple programmers develop the system simultaneously.

Struts uses a special Servlet as a switchboard to route requests from Web browsers to the appropriate ServerPage. This made the DECA system much easier to design. It will also ease the implementation and possible maintaining phases.

5. EXPERIENCES SO FAR

The main reason for the use of J2EE in DECA was to exploit the easy JDBC database connectivity and the security model. However, the design team chose to use an object database which rendered the advantages the J2EE could bring to the database connectivity obsolete.

J2EE framework is very useful to this projects, because it offers a solid framework for web based enterprise applications. This means that the design team could save a considerable amount of work, because we have things J2EE offers for granted.

The effects of using Jakarta Struts framework is not yet clearly visible since the design of the user interface elements is still under construction.

6. REFERENCES

J2EE BluePrints

http://java.sun.com/blueprints/guidelines/designing_enterprise_applications/index.html

Jakarta Struts

<http://jakarta.apache.org/struts>