

Services Management Model Based on the SOA

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Abstract. Service-Oriented Architecture (SOA) constructs applications by publishing services in an open network environment. In network environment individual service highly dynamically changes, it is required the system based on services to adapt to this change. But in the current service management in network environment, there isn't a good, unified management mode, management mechanism, service and quality control system, and lack of theoretical foundation to express formal service system. In this paper, a service management framework is designed. A mechanism and method based on strategy and dynamic network environment service management are proposed.

Keywords: Network, service management, management system

1 Introduction

In recent years, more and more enterprises and academic institutions involved in the management of research resources among services expand research and other services management standards and technologies. From the current overall situation of China Telecom IT point of view, in the Chinese telecom enterprise information strategy planning (ITSP) guidance, China Telecom IT in recent years, evolving construction, has been the traditional independence of the system a little bit messy integration of specification can focus on arrangements and the data can be shared system of CTG-MBOSS systems. In this fusion of the mobile Internet environment, service management platform from independent resources toward integration, in this process, there is the traditional carrier-class business management system a lot of questions, including: network independent, difficult to integrate business systems; the need more effective business support environment to support the introduction of new services and frequent release; repeat part platform capabilities, lack of unified planning, resulting in inconsistent user experience consequences; resource sharing can not do these questions have to be through the establishment of a sound IT service management system, gradually resolved.

2 The new service-oriented architecture SOA technology

Web Service is a new SOA (Service Oriented Architecture) technology, web services are an online application service issued by the company, you can accomplish a

specific business needs, self-packaging, and other advantages of loose coupling and platform independence. According to the definition of the W3C, Web Service should be a machine to support interoperability between different network software system, its interface is defined by the XML standard, using the HTTP, SOAP, WSDL, UDDI and other protocols, including service provider (Service Provider), service registration Center (Service Broker), the service requester (Service Requester) three roles, release (Publish), Find (Find), bind (Bind) three operations. Service providers publish services through a service registry, and respond to request services; service registry service providers publish services described where the requester in the registry can find the required services and access to relevant information and services; after the service requestor in the registry to get the interface and location information services, through binding operation, call the required service. web services architecture shown in Figure 1:

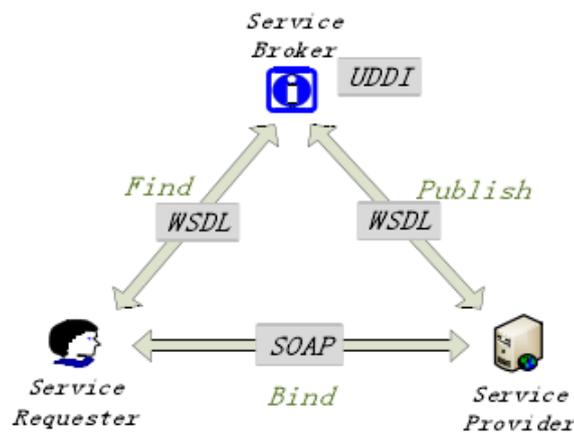


Fig. 1. web service architecture diagram

WebService technology can mask the underlying implementation details of the service, so that service managers can not concern specific implementation services, and related information, such as interfaces and parameters can only know the service to facilitate service integration and data reuse, we use Web services standards the mobile Internet services are published as Webservice, to achieve a unified description and management services.

3 Property management service resources

With the increase of mobile Internet service resources, especially when these services to achieve similar functionality, how to effectively and quickly select the service to be a need to focus on the problem, concerned only with the functional properties of the service and the service can not achieve effective selection, should also consider the quality of service attributes. Quality property management services, mainly for the price of the service, response time, availability, reliability, management and other QoS attributes, including a comparison of quality of service, such as updating each

attribute. Reliability update policy discussions. Assumed that within a certain period of time t , $t = t_n - t_k > 0$ is called service has accumulated in the t_n period N times, where there are n call to be successfully executed, is called the cumulative period K times t_k , where there are k times the call is unsuccessful, the service call success rate in period t , ie reliability:

$$R = 1 - \frac{n - k}{N - K}$$

(1)

According to equation (1) can be dynamically calculated based on the service reliability of the results of the latest call, however, considering the service has just begun to be invoked, N , K minimal, n , k may even be zero, so that the reliability of the calculated 1, which is obviously unreasonable, and therefore need to be modified on the type ^[1-2]. Assuming the initial value of the reliability of the service registration is R_u , taking into account the effect of the initial value as described in (2), the corrected reliability calculation formula:

$$R = \frac{n - k}{N - K} \left(1 - \frac{n - k}{N - K} \right) + \frac{U}{N - U} R_u$$

(2)

According to the above reliability updated policy, service response time is calculated as:

$$T = \frac{n - k}{N + U} \times \frac{\sum_{i=1}^N T_i}{N} + \frac{U}{N + U} T_u$$

(3)

Wherein, N is the total number of calls, U and formula (2) as the value, T_i is the response time t of each execution period, T_u is the initial value of the response time.

4 Three-tier technology in IT event management system to achieve

Many current java web developer to Struts, Spring, Hibernate organically integrate the three frameworks, is called the SSH lightweight framework. SSH framework system is divided into four duties have presentation layer, business logic, data persistence layer and the module level, belong to different duties, the overall use of the infrastructure system as Struts, MVC separation performed, and the framework of the model part of the framework for the use of the Hibernate persistence layer support, use Spring for the business layer is indicated in Figure 1. The basic structure of the system for business processes: interaction through JSP pages, the presentation layer to achieve the transfer request and receive a response, and then through the Struts configuration file will accept container receives the request queue or delegated to conduct the corresponding processing ^[3-5]. The business layer management

component provides a container for the behavior and the behavior of the component business model object data processing business logic.

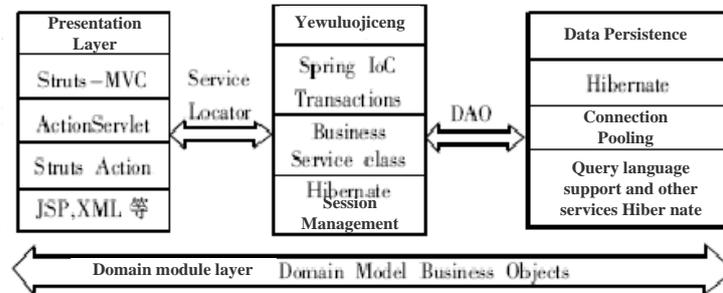


Fig. 2. General SSH architecture system architecture diagram

Provides event handling, buffer pools and other services in order to improve system performance optimization, and to ensure the integrity and security of data, but it is dependent on the object persistence layer mapping and data exchange HIBERNATE, and processes the request and returns the result.

Step One: Create a Web project named itsm, shown in Figure 3. Step two: Jar package required for the project are copied to WebRoot / WEB-INF / lib directory 1) struts2 required jar package:

- struts2-core-2.0.11.jar
- xwork-2.0.4.jar
- ognl-2.6.11.jar



Fig. 3. New Project Wizard

- freemarker-2.3.8.jar
- commons-logging-1.0.4.jar
- struts2-spring-plugin-2.0.11.2.jar

The third step: web.xml configuration. In order to properly use SSH, you need to be configured in web.xml for Struts and Spring. This completes the configuration work web.xml file in the project, implemented support for Spring, Struts's. Step Four: spring-context.xml file configuration. This file is spring core configuration file, which is equivalent to a facility that can be configured in the file, depending on the effectiveness of manually modify the configuration file, call different methods to achieve without modifying the source code and recompile the different effects you can achieve the purpose of .

5 Conclusion

This paper considers the needs of these management, functional and non-functional properties of the service attributes combine to achieve a classification query service, automatic composition and choice of services to provide an effective mobile Internet service resource management system. Based on the study on the basis of the relevant service management conducted a preliminary study, and achieved some results, however, due to the results of the mobile Internet service complexity, there are still many aspects need further study.

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