.2008/8/6

JSON-RPC FOR JAVA 使用说明

《JavaScript 高级应用与实践》的延伸 | 夏天

[QQ: 11602011] [轻量级、零入侵、级联调用 JSON-RPC for JAVA AJAX 框架]

目　　录

概述

继《JavaScript 高级应用与实践》之后推出的 json-rpc-for-java 开源代码，是仅仅 100 行的 javascript 代码和不到 10 个 java 文件实现的超级轻量级的通过 javaScript 快速调用 java 对象并返回任意对象的轻量级框架，并且支持级联调用，也就是说不需要额外 的 JavaScript 编程，就可以通过 javascript 调用被注册的 java 对象并返回 java 对象，如果被返回的对象还有方法，这个在 javascript 中返回的 java 对象的变量，还可以继续调用它的方法.....这就是这个轻量级 json-rpc-for-java 的神奇之处。

链接

作者相关链接

作者 csdn 博客
作者新浪 600 多万次点击博客
作者网站

开源项目地址

http://code.google.com/p/json-rpc-for-java/

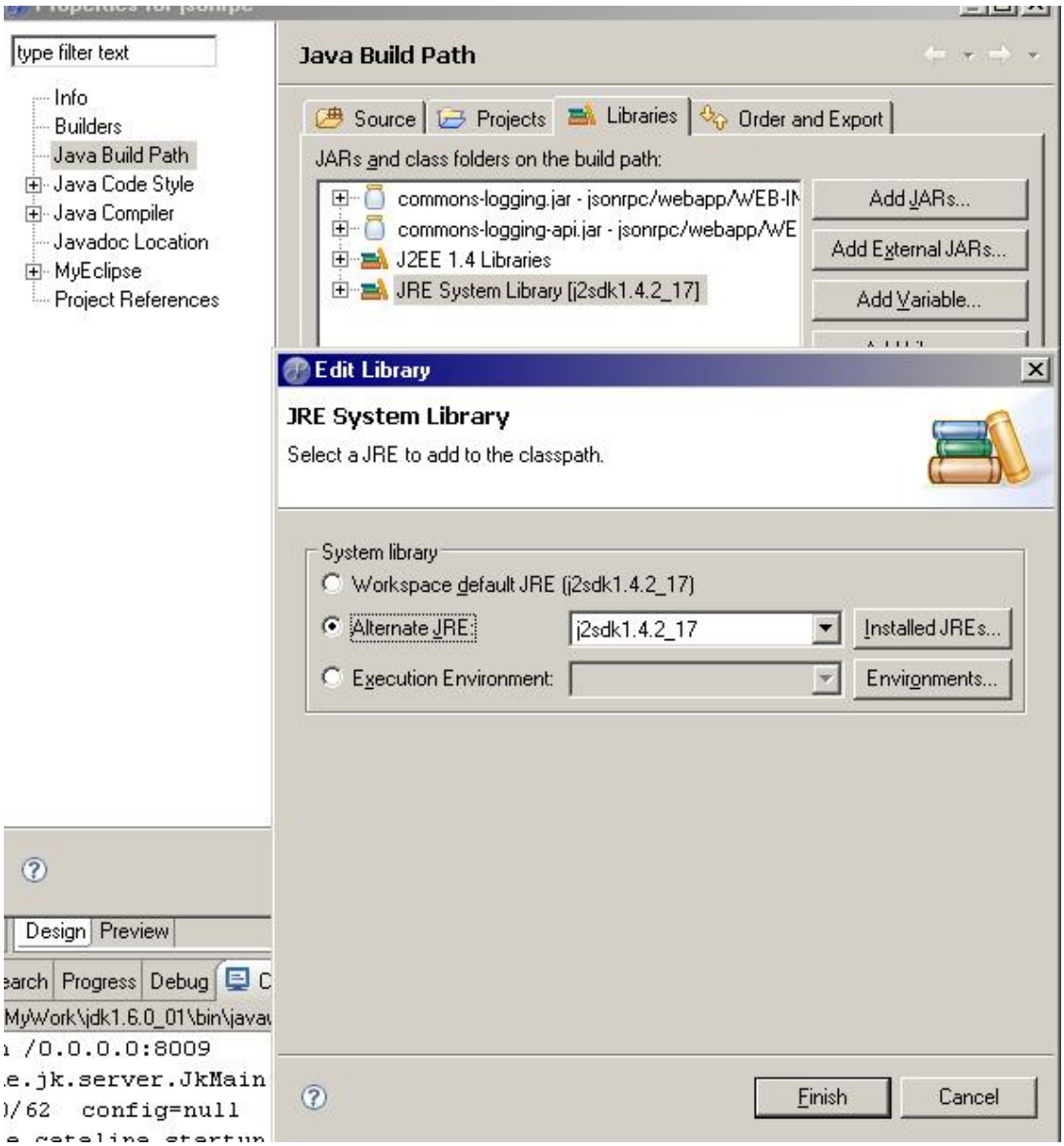
工程 svn 下载地址

http://json-rpc-for-java.googlecode.com/svn/trunk/
不需要用户名和密码。

示例工程下载地址

http://json-rpc-for-java.googlecode.com/files/JsonRpcExample2008-08-05.rar

测试环境：MyEclipse、JRE1.4(或 1.6)、tomcat 5.0(或 6.0) 如果你要测试，可以采用相应的环境，不一定要那么高版本的环境 ,Import 工程后请注意修改工程中 JRE 为正确的路径：



支持的浏览器

IE4、IE5、IE6、IE7、IE8、FireFox 2.0.16、FireFox 3.01、Opera 9.5、Safari 3.0.3 等等。

Java 服务方法入口参数类型

2.0 之前的版本只支持，简单类型，如 String，number，在 3.0 中将支持复杂类型的传入。

Java 对象到 JavaScript 对象的对照表

调用异常时返回 false。

Java 对象	JavaScript 对象	说明
java.lang.String	String	
java.lang.Object	String	调用 java 对象的 toString()后转换到 JavaScript 里
java.util.Date、java.sql.Timestamp	String	格式为 yyyy-MM-dd HH:mm:ss.000，如果时分秒都为 0，则为：yyyy-MM-dd
java.lang.Boolean	Blooean	对应的值：true、false
java.lang.Character	String	单引号的字符串，例如：‘c’
java.lang.Short、java.lang.Integer、java.lang.Long、java.lang.Float、java.lang.Double、java.math.BigDecimal	Number	到 JavaScript 中都为数字对象，可以直接参与加、减、乘、除运算
java.util.Map	Object	例如：obj[“key1”]、obj[“key3”]、obj.key3，唯独没有以 function 作为属性的方法，当然，属于 Object.prototype 的 function 属性依然有的
java.util.List	Array	例如：a[0]、a[2].getList() 也就是说 List 里也可以存在复合对象，这些对象依然可以有自己的方法
null	null	空对象
其他 Java 对象	Object	例如：obj.displayName()、obj.aac001，可以有属性和方法

功能介绍

自动捕获异常

在你编写的 java 服务类的方法中不需要 try{….}catch(Exception e){}，本框架会为你捕获异常错误消息，当你在 javascript 中没有获取到正确的数据，可以调用异步对象的方法 getErrMsg()获取异常消息，该方法封装在 jcore.jsonrpc.common.JsonRpcObject 中，也就是 AJAX 服务 java 基类中。

JavaScript 中释放注册的 Java 服务对象

你只需要在 JavaScript 中调用 release（）就可以释放注册的 Java 对象资源，详细见示例工程，或者见：

http://code.google.com/p/json-rpc-for-java/wiki/Wiki32

级联调用功能

不明白的地方请结合示例工程进行理解。

1、Java 中注册复合对象 myjsonrpc

2、JSP JavaScript 中获取该对象：var myjsonrpc = JsonRpcClient().myjsonrpc;

3、调用被注册的 java 对象的方法 getMyObj，返回复合的 java 对象 TestDomain：

var oDomain = myjsonrpc. getMyObj();

// 继续调用该返回的 java 对象的方法

alert(oDomain. toXml())

或者：alert(myjsonrpc. getList()[1].toXml());

如果 toXml 返回的还是一个复合的 Java 对象，你可以继续在 JavaScript 中继续调用，而不需要额外的编程。

使用

Web.xml 配置

需要在 web.xml 中加入下面的配置

```
<servlet>
    <servlet-name>JSONRPCServlet</servlet-name>
    <servlet-class>
        jcore.jsonrpc.servlet.JSONRPCServlet
    </servlet-class>

<!--
<init-param>
            <param-name>regAppClassNames</param-name>
            <param-value>
        注册这些对象，让所有的web用户都能使用这些JSON-RPC java对象
        这些对象会复制到每个用户的session对象中，因此他们必须实现接口Serializable
        以分号作为分割符号
                myTest:jcore.jsonrpc.test.Test;
                myTrs:jcore.jsonrpc.test.A
            </param-value>
```

```
        </init-param>
-->

        <load-on-startup>2</load-on-startup>
    </servlet>
    <servlet-mapping>
        <servlet-name>JSONRPCServlet</servlet-name>
        <url-pattern>/JRPC</url-pattern>
    </servlet-mapping>
```

引入 Jar 包

需要在工程中引入：JSON-RPC.jar、commons-logging.jar、commons-logging-api.jar，其中后面两个 jar 在示例工程中的 JsonRpcExample\webapp\WEB-INF\lib\ 下。示例工程下载地址：

http://json-rpc-for-java.googlecode.com/files/JsonRpcExample2008-08-05.rar

而，JSON-RPC.jar，你也可以引入源代码重新进行打包。

AJAX 服务 Java 类的编写

必须继承与 **jcore.jsonrpc.common.JsonRpcObject**，并实现接口 **java.io.Serializable**。例如示例工程中的 AJAX 服务 Java 类：

```
package test;
import java.io.Serializable;
import java.util.ArrayList;
import java.util.Date;
import java.util.HashMap;
import java.util.List;
import java.util.Map;

import jcore.jsonrpc.common.JsonRpcObject;

public class TestObject extends JsonRpcObject implements Serializable{
    private static final long serialVersionUID = 1L;

    private List myList = new ArrayList();
    private Map map = new HashMap();

    public TestObject()
    {
        myList.add("good");
        myList.add(new TestDomain());
        // map中也可以放入复合对象
        map.put("first", "第一条值");
```

```
        map.put("p2", new Date());
        map.put("domain", myList.get(1));
    }

    /***
     * 返回Map对象
     * @return
     */
    public Map getMap()
    {
        return map;
    }

    /***
     * 获取一个普通对象
     * @return
     */
    public Object getStr()
    {
        return myList.get(0);
    }

    /***
     * 获取一个复合对象
     * @return
     */
    public Object getMyObj()
    {
        return myList.get(1);
    }

    /***
     * 获取List对象
     * @return
     */
    public List getList()
    {
        return myList;
    }
}
```

自己基类的编写

同样，你可以继承 **jcore.jsonrpc.common.JsonRpcObject** 实现一些基类，这样在自己的项目中更加方便实用，例如：

```
package com.yinhai.yhsi2.web.common;

import com.yinhai.webframework.session.UserSession;
import jcore.jsonrpc.common.JsonRpcObject;

public abstract class Yhsi2JsonRpcObj extends JsonRpcObject {

	private UserSession us = null;
	public Yhsi2JsonRpcObj() {
		super();
	}

	public UserSession getUs() {
		if(null == us)
			us = UserSession.getUserSession(getRequest());
		return us;
	}
}
```

AJAX 服务 Java 类的注册

// 注意，被注册的类必须是能被实例化的类

jcore.jsonrpc.common.JsonRpcRegister.registerObject(us, "myjsonrpc", test.TestObject.class);

使用 test.TestObject.class 的方式是保证多次注册不至于 test.TestObject 被多次注册而执行多次实例化，从而提高性能，并允许多次注册——实际上内部只注册了一次。

自己注册基类的编写

当然，你也可以继承 jcore.jsonrpc.common.JsonRpcRegister 以便使得在应用菜单切换的时候释放资源，例如：

```
package com.yinhai.yhsi2.web.common;
import javax.servlet.http.HttpServletRequest;

import jcore.jsonrpc.common.Content;
```

```
import jcore.jsonrpc.common.JSONRPCBridge;

import com.yinhai.webframework.session.UserSession;
import jcore.jsonrpc.common.JsonRpcRegister;

/***
 * 注册 JsonRpc 对象
 * @author just
 *
 */
public class JsonRpcRegister extends jcore.jsonrpc.common.JsonRpcRegister{

	/***
	 * 通过 request 来注册对象
	 * @param request
	 * @param szKeyName
	 * @param o
	 */
	public static void registerObject(HttpServletRequest request, String szKeyName, Object o)
	{
		registerObject(UserSession.getUserSession(request), szKeyName, o);
	}

	/***
	 * 通过 request 来注册对象
	 * @param request
	 * @param szKeyName
	 * @param o
	 */
	public static void registerObject(UserSession us, String szKeyName, Object o)
	{
		if(null != us)
		{
			JSONRPCBridge brg =
(JSONRPCBridge)us.getCurrentBusiness().getSessionResource(Content.RegSessionJSONRPCName);
			// 如果是第一次就注册对象
			if(null == brg)
				us.getCurrentBusiness().putSessionResource(Content.RegSessionJSONRPCName, brg =
new JSONRPCBridge().setSession(us.getHttpSession()));
			brg.registerObject(szKeyName, o);
		}
	}
```

```
	/***
	 * 通过 request 来注册对象
	 * @param request
	 * @param szKeyName
	 * @param o
	 */
	public static void registerObject(HttpServletRequest request, String szKeyName, Class o)
	{
		registerObject(UserSession.getUserSession(request), szKeyName, o);
	}

	/***
	 * 通过 request 来注册对象
	 * @param request
	 * @param szKeyName
	 * @param o
	 */
	public static void registerObject(UserSession us, String szKeyName, Class o)
	{
		if(null != us)
		{
			JSONRPCBridge brg =
(JSONRPCBridge)us.getCurrentBusiness().getSessionResource(Content.RegSessionJSONRPCName);
			// 如果是第一次就注册对象
			if(null == brg)
				us.getCurrentBusiness().putSessionResource(Content.RegSessionJSONRPCName, brg =
new JSONRPCBridge().setSession(us.getHttpSession()));
			try {
				brg.registerObject(szKeyName, o.newInstance());
			} catch (InstantiationException e) {
			} catch (IllegalAccessException e) {
			}
		}
	}
}
```

JSP 中的使用

引入 JsonRpcClient.js

```
<script charset="UTF-8" type="text/JavaScript" src="JsonRpcClient.js"></script>
```

调用

```
<script charset="UTF-8" type="text/JavaScript"><!--//--><![CDATA[//><!--

// myjsonrpc 就是通过 JsonRpcRegister.registerObject 注册的名字
// 这时候这里的 rpc 就拥有了通过 JsonRpcRegister.registerObject 注册的
// 异步对象的相应方法了
var rpc = JsonRpcClient().myjsonrpc;
// 传入个人编号获取人的基本信息并填充到界面上
if("dto(aac001)" === o.name && 0 === "aab001".getValue().length)
  {
        if(0 < o.value.length)
        {
        // 获取到的 myjsonrpc 同样有 aac001,aab001 等等属性，
        // 你可以直接使用，同样有 getAac001()等方法，
        // 可以直接使用，而不需要额外的编码
              var myjsonrpc = rpc.getEmployeeBaseInfo(o.value), errMsg = rpc.getErrMsg();
              if(0 < errMsg.length)
                  return o.focus(), alert(errMsg), false;
              for(var k in myjsonrpc)
                 if(6 === k.length && myjsonrpc[k])
                   k.getObj() && k.setValue(myjsonrpc[k]);
              fnSetAtbt("dto(aac001)".getObj(),1),
              fnSetAtbt("dto(aab001)".getObj(),4),
              "aab001".focus();
              // 关闭错误消息提示
              ;
        }
  }
// 2008-08-02 增加自动拦截异常消息功能，因此在你写的代码中不需要编写 try catch
// 如果有异常消息，可以在 js 中调用 rpc.getErrMsg()获得
// 如果需要释放被注册名为 myjsonrpc 的对象 JsonRpcObj，可以在 js 中调用 rpc.release();

//--><!]]></script>
```

如果本调用的方法 getEmployeeBaseInfo 的第一个参数是 function，则把它作为异步的回调函数。

英语版本

```
Contents
4 Summary
```

Overview

Following the "JavaScript and practice of advanced applications," after the launch json-rpc-for-java open source code, is only 100 lines of javascript code and less than 10 java super lightweight paper to achieve the rapid adoption of javaScript call java objects and Back to the arbitrary target lightweight framework, and support the cascade call, which means do not need additional JavaScript programming, it can be registered through the javascript call object and return to the java java object, if there are ways to return to the target, In this javascript in the java object to return to the variables, you can also continue to call it the way ..... This is the lightweight json-rpc-for-java the Shenqizhichu.

Link

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Author site

Open-source projects address

http://code.google.com/p/json-rpc-for-java/

Download address works svn
http://json-rpc-for-java.googlecode.com/svn/trunk/
Does not require a username and password.
Examples of projects download address

http://json-rpc-for-java.googlecode.com/files/JsonRpcExample2008-08-05.rar

Test environment: MyEclipse, JRE1.4 (or 1.6), tomcat 5.0 (or 6.0) If you want to test, can use the appropriate environment, need not be so high version of the environment, Import projects in the works Please note amended to correct JRE The path:

Supported browser
IE4, IE5, IE6, IE7, IE8, FireFox, Opera, Safari and so on.

Java objects to the JavaScript object tables
JavaScript object that Java objects
java.lang.String String
java.lang.Object String call java object toString (), after conversion to JavaScript
java.util.Date, java.sql.Timestamp String But for yyyy-MM-dd HH: mm: ss.000, if at all Fenmiao 0, is: yyyy-MM-dd
java.lang.Boolean Blooean the corresponding value: true, false
java.lang.Character String single string, such as: 'c'
java.lang.Short,
java.lang.Integer,
java.lang.Long,
java.lang.Float,
java.lang.Double,
java.math.BigDecimal Number in JavaScript are for the number of objects, can be directly involved in the increase, subtraction, multiplication, with the exception of computing
java.util.Map Object, for example: obj ["key1"], obj ["key3"], obj.key3, not only function of the way, of course, the function Object.prototype are still some properties
java.util.List Array, for example: a [0], a [2]. getList ()
In other words, can also exist List of objects, these objects can still have their own methods
null null space object
Object other Java objects such as: obj.displayName (), obj.aac001, can have properties and methods
Features

Automatically be caught
In your java services prepared by the method does not require try (….) Catch (Exception e) (), this framework will you catch an error message, but you do not get javascript to the correct data, can be called asynchronous Object methods getErrMsg () access to unusual sources, the method in jcore.jsonrpc.common.JsonRpcObject in the package, which is java-based AJAX services category.
JavaScript registered in the release of the Java clients
You only need to call in JavaScript release () on the release of the Java objects registered resources, see detailed examples of works, or see " http://code.google.com/p/json-rpc-for-java/wiki/Wiki32
Cascade called functional
Please do not understand the combination of local examples of the works to understand.
1, Java in the registration of objects myjsonrpc
2, JSP JavaScript in access to the object: var myjsonrpc = JsonRpcClient (). Myjsonrpc;
3, the call was registered java object methods getMyObj, the return of the java object TestDomain:
var oDomain = myjsonrpc. getMyObj ();
/ / To the call to return to the java object methods
alert (oDomain. toXml ())
Or: alert (myjsonrpc. getList () [1]. ToXml ());
If toXml return or a composite of Java objects, you may continue to call in JavaScript, without the need for additional programming.
Use
Web.xml configuration
Web.xml need to add the following configuration "
<servlet>
<servlet-name> JSONRPCServlet </ servlet-name>
<servlet-class>
Jcore.jsonrpc.servlet.JSONRPCServlet
</ Servlet-class>
<load-on-startup> 2 </ load-on-startup>
</ Servlet>
<servlet-mapping>
<servlet-name> JSONRPCServlet </ servlet-name>
<url-pattern> / JRPC </ url-pattern>
</ Servlet-mapping>
The introduction of Jar package
The need to introduce the works: JSON-RPC.jar, commons-logging.jar, commons-logging-api.jar, which followed two examples of projects in the jar in the JsonRpcExample \ webapp \ WEB-INF \ lib \ under. Examples of projects download address:

```
http://json-rpc-for-java.googlecode.com/files/JsonRpcExample2008-08-0
5.rar
And, JSON-RPC.jar, you can re-introduction of the source code package.
AJAX Java services such as the preparation of
We must inherit and jcore.jsonrpc.common.JsonRpcObject, and to achieve
interface java.io.Serializable. Examples of projects such as AJAX
services in the Java class:
package test;
import java.io.Serializable;
import java.util.ArrayList;
import java.util.Date;
import java.util.HashMap;
import java.util.List;
import java.util.Map;

import jcore.jsonrpc.common.JsonRpcObject;

public class TestObject extends JsonRpcObject implements Serializable (
Private static final long serialVersionUID = 1L;

Private List myList = new ArrayList ();
Private Map map = new HashMap ();

Public TestObject ()
(
MyList.add ( "good");
MyList.add (new TestDomain ());
/ / Map of the compound can also Add to object
Map.put ( "first", "The first duty");
Map.put ( "p2", new Date ());
Map.put ( "domain", myList.get (1));
)

/ ***
* To Map object
* @ Return
* /
Public Map getMap ()
(
Return map;
)

/ ***
Get an ordinary object
```

```
* @ Return
* /
Public Object getStr ()
(
Return myList.get (0);
)

/ ***
* Access to a composite target
* @ Return
* /
Public Object getMyObj ()
(
Return myList.get (1);
)

/ ***
Get List object
* @ Return
* /
Public List getList ()
(
Return myList;
)
)

The preparation of their base class
Similarly, you can achieve some of succession
jcore.jsonrpc.common.JsonRpcObject base class, so in their own projects
in a more convenient and practical, such as:
package com.yinhai.yhsi2.web.common;

import com.yinhai.webframework.session.UserSession;
import jcore.jsonrpc.common.JsonRpcObject;

public abstract class Yhsi2JsonRpcObj extends JsonRpcObject (

Private UserSession us = null;
Public Yhsi2JsonRpcObj () (
Super ();
)

Public UserSession getUs () (
If (null == us)
```

```
Us = UserSession.getUserSession (getRequest ());
Return us;
)
)

AJAX Java class registration services
/ / Note that the class must be registered is to be examples of the type

jcore.jsonrpc.common.JsonRpcRegister.registerObject (us, "myjsonrpc",
test.TestObject.class);

Test.TestObject.class way is to use multiple registration does not
guarantee test.TestObject been repeatedly registered the implementation
of several examples, and then to improve performance and allow multiple
registration - indeed, within only registered once.
Registration of their own kind of preparation
Of course, you can also inherit jcore.jsonrpc.common.JsonRpcRegister in
the application menu in order to make the switch when the release of
resources, such as:
package com.yinhai.yhsi2.web.common;
import javax.servlet.http.HttpServletRequest;

import jcore.jsonrpc.common.Content;
import jcore.jsonrpc.common.JSONRPCBridge;

import com.yinhai.webframework.session.UserSession;
import jcore.jsonrpc.common.JsonRpcRegister;

/ ***
  * Registration JsonRpc target
  * @ Author just
  *
  * /
public class JsonRpcRegister extends
jcore.jsonrpc.common.JsonRpcRegister (

/ ***
* The request to register objects
* @ Param request
* @ Param szKeyName
* @ Param o
* /
public static void registerObject (HttpServletRequest request, String
szKeyName, Object o)
```

```
(
registerObject (UserSession.getUserSession (request), szKeyName, o);
)

/ ***
* The request to register objects
* @ Param request
* @ Param szKeyName
* @ Param o
* /
public static void registerObject (UserSession us, String szKeyName,
Object o)
(
If (null! = Us)
(
JSONRPCBridge brg = (JSONRPCBridge) us.getCurrentBusiness ().
GetSessionResource (Content.RegSessionJSONRPCName);
   / / If this is the first time on the registration target
If (null == brg)
us.getCurrentBusiness (). putSessionResource
(Content.RegSessionJSONRPCName, brg = new JSONRPCBridge (). setSession
(us.getHttpSession ()));
Brg.registerObject (szKeyName, o);
)
)



/ ***
* The request to register objects
* @ Param request
* @ Param szKeyName
* @ Param o
* /
public static void registerObject (HttpServletRequest request, String
szKeyName, Class o)
(
registerObject (UserSession.getUserSession (request), szKeyName, o);
)

/ ***
* The request to register objects
* @ Param request
* @ Param szKeyName
```

```
* @ Param o
* /
public static void registerObject (UserSession us, String szKeyName,
Class o)
(
If (null! = Us)
(
JSONRPCBridge brg = (JSONRPCBridge) us.getCurrentBusiness ().
GetSessionResource (Content.RegSessionJSONRPCName);
   / / If this is the first time on the registration target
If (null == brg)
us.getCurrentBusiness (). putSessionResource
(Content.RegSessionJSONRPCName, brg = new JSONRPCBridge (). setSession
(us.getHttpSession ()));
Try (
brg.registerObject (szKeyName, o.newInstance ());
) Catch (InstantiationException e) (
) Catch (IllegalAccessException e) (
)
)
)
)

The use of JSP
The introduction of JsonRpcClient.js
<script charset="UTF-8" type="text/JavaScript" src="JsonRpcClient.js">
</ script>
Call
<script charset="UTF-8" type="text/JavaScript"> <!--//--><![ CDATA
[//><!--

/ / Myjsonrpc is registered by the name of JsonRpcRegister.registerObject
/ / Rpc here this time through the ownership of registered
JsonRpcRegister.registerObject
/ / Asynchronous method of the corresponding object
var rpc = JsonRpcClient (). myjsonrpc;
/ / Personal code into the basic access to information and to fill the
interface
if ( "dto (aac001)" === o.name & & 0 === "aab001". getValue (). length)
   (
       if (0 <o.value.length)
       (
       / / Myjsonrpc access to the same aac001, aab001 attributes, and
so on,
```

```
/ / You can use the same getAac001 (), and other methods,
/ / Can be used directly, without the need for additional coding
var myjsonrpc = rpc.getEmployeeBaseInfo (o.value), errMsg = rpc.getErrMsg
();
If (0 <errMsg.length)
Return o.focus (), alert (errMsg), false;
For (var k in myjsonrpc)
If (6 === k.length & & myjsonrpc [k])
K.getObj () & & k.setValue (myjsonrpc [k]);
FnSetAtbt ( "dto (aac001)". GetObj (), 1),
FnSetAtbt ( "dto (aab001)". GetObj (), 4),
"Aab001". Focus ();
/ / Off the wrong message that
;
)
   )
/ / 2008-08-02 abnormal increase automatically blocking information, so
you do not need to write the code in preparation try catch
/ / If there is unusual news, you can call js rpc.getErrMsg () was
/ / If you need the release of the registered name myjsonrpc target
JsonRpcObj, can call in js rpc.release ();

//--><!]]></ script>
```