RichFaces Developer Guide

RichFaces framework with a huge library of rich components and skinnability support

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1

Introduction

Rich Faces is an open source framework that adds Ajax capability into existing JSF applications without resorting to JavaScript.

Rich Faces leverages JavaServer Faces framework including lifecycle, validation, conversion facilities and management of static and dynamic resources. Rich Faces components with built-in Ajax support and a highly customizable look-and-feel can be easily incorporated into JSF applications.

Rich Faces allows to:

- Intensify the whole set of JSF benefits while working with Ajax. Rich Faces is fully integrated into the JSF lifecycle. While other frameworks only give you access to the managed bean facility, Rich Faces advantages the action and value change listeners, as well as invokes server-side validators and converters during the Ajax request-response cycle.

- Add Ajax capability to the existing JSF applications. Framework provides two components libraries (Core Ajax and UI). The Core library sets Ajax functionality into existing pages, so there is no need to write any JavaScript code or to replace existing components with new Ajax ones. Rich Faces enables page-wide Ajax support instead of the traditional component-wide support and it gives the opportunity to define the event on the page. An event invokes an Ajax request and areas of the page which become synchronized with the JSF Component Tree after changing the data on the server by Ajax request in accordance with events fired on the client.

- Create quickly complex View basing on out of the box components. Rich Faces UI library contains components for adding rich user interface features to JSF applications. It extends the Rich Faces framework to include a large (and growing) set of powerful rich Ajax-enabled components that come with extensive skins support. In addition, RichFaces components are designed to be used seamlessly with other 3d-party component libraries on the same page, so you have more options for developing your applications.

- Write your own custom rich components with built-in Ajax support. We're always working on improvement of Component Development Kit (CDK) that was used for Rich Faces UI library creation. The CDK includes a code-generation facility and a templating facility using a JSP-like syntax. These capabilities help to avoid a routine process of a component creation. The component factory works like a well-oiled machine allowing the creation of first-class rich components with built-in Ajax functionality even more easily than the creation of simpler components by means of the traditional coding approach.

- Package resources with application Java classes. In addition to its core, Ajax functionality of Rich Faces provides an advanced support for the different resources management: pictures, JavaScript code, and

CSS stylesheets. The resource framework makes possible to pack easily these resources into Jar files along with the code of your custom components.

- Easily generate binary resources on-the-fly. Resource framework can generate images, sounds, Excel spreadsheets etc.. on-the-fly so that it becomes for example possible to create images using the familiar approach of the "Java Graphics2D" library.

- Create a modern rich user interface look-and-feel with skins-based technology. Rich Faces provides a skinnability feature that allows easily define and manage different color schemes and other parameters of the UI with the help of named skin parameters. Hence, it is possible to access the skin parameters from JSP code and the Java code (e.g. to adjust generated on-the-fly images based on the text parts of the UI). RichFaces comes with a number of predefined skins to get you started, but you can also easily create your own custom skins.

- Test and create the components, actions, listeners, and pages at the same time. An automated testing facility is in our roadmap for the near future. This facility will generate test cases for your component as soon as you develop it. The testing framework will not just test the components, but also any other server-side or client-side functionality including JavaScript code. What is more, it will do all of this without deploying the test application into the Servlet container.

Rich Faces UI components come ready to use out-of-the-box, so developers save their time and immediately gain the advantage of the mentioned above features in Web applications creation. As a result, usage experience can be faster and easily obtained.

2

Technical Requirements

RichFaces was developed with an open architecture to be compatible with the widest possible variety of environments.

This is what you need to start working with RichFaces 3.1.0:

- Java
- JavaServer Faces
- Java application server or servlet container
- Browser (on client side)
- Richfaces framework

2.1. Supported Java Versions

- JDK 1.5 and higher

2.2. Supported JavaServer Faces Implementations

- Sun JSF 1.1 RI - 1.2
- MyFaces 1.1.1 - 1.2
- Facelets JSF 1.1.1 - 1.2
- Seam 1.2. - 2.0

2.3. Supported Servers

- Apache Tomcat 4.1 - 6.0
- IBM WebSphere 5.1 - 6.0
- BEA WebLogic 8.1 - 9.0
- Oracle AS/OC4J 10.1.3
- Resin 3.0

- Jetty 5.1.X
- Sun Application Server 8 (J2EE 1.4)
- Glassfish (J2EE 5)
- JBoss 3.2 - 4.2.x
- Sybase EAServer 6.0.1

2.4. Supported Browsers

- Internet Explorer 6.0 - 7.0
- Firefox 1.5 - 2.0
- Opera 8.5 - 9.0
- Netscape 7.0
- Safari 2.0

Note:

Safari 3.0 Beta is not supported.

This list is composed basing on reports received from our users. We assume the list can be incomplete and absence of your environment in the list doesn't mean incompatibility.

We appreciate your feedback on platforms and browsers that aren't in the list but are compatible with RichFaces. It helps us to keep the list up-to-date.

3

Getting Started with RichFaces

3.1. Downloading RichFaces 3.1.0

The latest release of RichFaces is available for download at:

http://labs.jboss.com/jbossrichfaces/downloads
in the RichFaces project area under JBoss.

3.2. Installation

- Unzip *"richfaces-ui-3.1.0-bin.zip"* file to the chosen folder.
- Copy *"richfaces-api-3.1.0.jar"* , *"richfaces-impl-3.1.0.jar"* , *"richfaces-ui-3.1.0.jar"* files into the *"WEB-INF/lib"* folder of your application.
- Add the following content into the *"WEB-INF/web.xml"* file of your application:

```
...
    <context-param>
        <param-name>org.richfaces.SKIN</param-name>
        <param-value>blueSky</param-value>
    </context-param>
    <filter>
        <display-name>RichFaces Filter</display-name>
        <filter-name>richfaces</filter-name>
        <filter-class>org.ajax4jsf.Filter</filter-class>
    </filter>
    <filter-mapping>
        <filter-name>richfaces</filter-name>
        <servlet-name>Faces Servlet</servlet-name>
        <dispatcher>REQUEST</dispatcher>
        <dispatcher>FORWARD</dispatcher>
        <dispatcher>INCLUDE</dispatcher>
    </filter-mapping>
```

- Add the following lines for each JSP page of your application.

```
<%@ taglib uri="http://richfaces.org/a4j" prefix="a4j"%>
<%@ taglib uri="http://richfaces.org/rich" prefix="rich"%>
```

For XHTML pages:

```
<xmlns:a4j="http://richfaces.org/a4j">
```

```
<xmlns:rich="http://richfaces.org/rich">
```

Note:

The previous namespaces URIs (https://ajax4jsf.dev.java.net/ajax and http://richfaces.ajax4jsf.org/rich) are also available for backward compatibility.

3.3. Simple Ajax Echo Project

In our JSF project you need only one JSP page that has a form with a couple of child tags: **<h:inputText>** and **<h:outputText>** .

This simple application let you input some text into the **<h:inputText>** , send data to the server, and see the server response as a value of **<h:outputText>** .

3.3.1. JSP Page

Here is the necessary page (echo.jsp):

```
<%@ taglib uri="http://richfaces.org/a4j" prefix="a4j"%>
<%@ taglib uri="http://richfaces.org/rich" prefix="rich"%>
<%@ taglib uri="http://java.sun.com/jsf/html" prefix="h"%>
<%@ taglib uri="http://java.sun.com/jsf/core" prefix="f"%>
<html>
  <head>
    <title>repeater </title>
  </head>
  <body>
    <f:view>
      <h:form>
          <rich:panel header="Simple Echo">
            <h:inputText size="50" value="#{bean.text}" >
              <a4j:support event="onkeyup" reRender="rep"/>
            </h:inputText>
            <h:outputText value="#{bean.text}" id="rep"/>
          </rich:panel>
      </h:form>
    </f:view>
  </body>
</html>
```

Only two tags distinguish this page from a "regular" JSF one. There are **<rich:panel>** and **<a4j:support>** .

The **<rich:panel>** allows to place the page elements in rectangle panel that can be skinned.

The **<a4j:support>** with corresponding attributes (as it was shown in the previous example) adds an Ajax support to the parent **<h:inputText>** tag. This support is bound to "onkeyup" JavaScript event, so that each time when this event is fired on the parent tag, our application sends an Ajax request to the server. It means that the text field pointed to our managed bean property contains up-to-date value of our input.

The value of *"reRender"* attribute of the **<a4j:support>** tag defines which part(s) of our page is (are) to be updated. In this case, the only part of the page to update is the **<h:outputText>** tag because its ID value matches to the value of *"reRender"* attribute. As you see, it's not difficult to update multiple elements on the page, only list their IDs as the value of *"reRender"* .

3.3.2. Data Bean

In order to build this application, you should create a managed bean:

```
package demo;

        public class Bean {
        private String text;
        public Bean() {
        }
        public String getText() {
        return text;
        }
        public void setText(String text) {
        this.text = text;
        }
        }
```

3.3.3. faces-config.xml

Next, it's necessary to register your bean inside of the faces-config.xml file:

```
   <?xml version="1.0" encoding="UTF-8"?>
   <!DOCTYPE faces-config PUBLIC "-//Sun Microsystems, Inc.//DTD  JavaServer Faces
Config 1.1//EN"
   "http://java.sun.com/dtd/web-facesconfig_1_1.dtd">
   <faces-config>
     <managed-bean>
       <managed-bean-name>bean</managed-bean-name>
       <managed-bean-class>demo.Bean</managed-bean-class>
       <managed-bean-scope>request</managed-bean-scope>
       <managed-property>
         <property-name>text</property-name>
         <value/>
       </managed-property>
     </managed-bean>
   </faces-config>
```

Note:

Nothing that relates directly to RichFaces is required in the configuration file.

3.3.4. Web.xml

It is also necessary to add jar files (see installation chapter) and modify the "web.xml" file:

```
   <?xml version="1.0"?>
   <web-app version="2.4" xmlns="http://java.sun.com/xml/ns/j2ee"
```

```
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:schemaLocation="http://java.sun.com/xml/ns/j2ee
http://java.sun.com/xml/ns/j2ee/web-app_2_4.xsd">
   <display-name>a4jEchoText</display-name>
   <context-param>
       <param-name>org.richfaces.SKIN</param-name>
       <param-value>blueSky</param-value>
   </context-param>
   <context-param>
       <param-name>javax.faces.STATE_SAVING_METHOD</param-name>
       <param-value>server</param-value>
   </context-param>
   <filter>
       <display-name>RichFaces Filter</display-name>
       <filter-name>richfaces</filter-name>
       <filter-class>org.ajax4jsf.Filter</filter-class>
   </filter>
   <filter-mapping>
       <filter-name>richfaces</filter-name>
       <servlet-name>Faces Servlet</servlet-name>
       <dispatcher>REQUEST</dispatcher>
       <dispatcher>FORWARD</dispatcher>
       <dispatcher>INCLUDE</dispatcher>
   </filter-mapping>
   <listener>
       <listener-class>com.sun.faces.config.ConfigureListener</listener-class>
   </listener>

   <!-- Faces Servlet -->
   <servlet>
       <servlet-name>Faces Servlet</servlet-name>
       <servlet-class>javax.faces.webapp.FacesServlet</servlet-class>
       <load-on-startup>1</load-on-startup>
   </servlet>

   <!-- Faces Servlet Mapping -->
   <servlet-mapping>
       <servlet-name>Faces Servlet</servlet-name>
       <url-pattern>*.jsf</url-pattern>
   </servlet-mapping>
   <login-config>
       <auth-method>BASIC</auth-method>
   </login-config>
   </web-app>
```

Now your application should work.

3.3.5. Deployment

Finally, you should be able to place this application on your Web server.To start your project, point your browser at http://localhost:8080/a4jEchoText/echo.jsf

4

Settings for different environments

RichFaces comes with support for all tags (components) included in the JavaServer Faces specification. To add RichFaces capabilities to the existing JSF project you should just put the RichFaces libraries into the lib folder of the project and add filter mapping. The behavior of the existing project doesn't change just because of RichFaces.

4.1. Web Application Descriptor Parameters

RichFaces doesn't require any parameters to be defined in your web.xml. But the RichFaces parameters listed below may help with development and may increase the flexibility of RichFaces usage.

Table 4.1. Initialization Parameters

Name	Default	Description
org.richfaces.SKIN	DEFAULT	Is a name of a skin used in an application. It can be a literal string with a skin name, or the *EL* expression (#{...}) pointed to a *String* property (skin name) or a property of a org.richfaces.framework.skin type. Skin in last case, this instance is used as a current skin
org.ajax4jsf.LOGFILE	none	Is an URL to an application or a container log file (if possible). If this parameter is set, content from the given URL is shown on a *Debug* error page in the *iframe* window
org.ajax4jsf.VIEW_HANDLERS	none	Is a comma-separated list of custom *ViewHandler* instances for inserting in chain. Handlers are inserted BEFORE RichFaces viewhandlers in the given order. For example, in facelets application this parameter must contain

Name	Default	Description
		com.sun.facelets.FaceletViewHandler, instead of declaration in faces-config.xml
org.ajax4jsf.CONTROL_COMPONENTS	none	Is a comma-separated list of names for a component as a special control case, such as messages bundle loader, alias bean components, etc. Is a type of component got by a reflection from the static field *COMPONENT_TYPE*. For components with such types encode methods always are called in rendering Ajax responses, even if a component isn't in an updated part
org.ajax4jsf.ENCRYPT_RESOURCE_DATA	false	For generated resources, such as encrypt generation data, it's encoded in the resource URL. For example, URL for an image generated from the *mediaOutput* component contains a name of a generation method, since for a hacker attack, it is possible to create a request for any JSF baked beans or other attributes. To prevent such attacks, set this parameter to "true" in critical applications (works with JRE > 1.4)
org.ajax4jsf.ENCRYPT_PASSWORD	random	Is a password for encryption of resources data. If isn't set, a random password is used
org.ajax4jsf.COMPRESS_SCRIPT	true	It doesn't allow framework to reformat JavaScript files (makes it impossible to debug)

Note:

org.richfaces.SKIN is used in the same way as org.ajax4jsf.SKIN

Table 4.2. org.ajax4jsf.Filter Initialization Parameters

Name	Default	Description
log4j-init-file	-	

Name	Default	Description
		Is a path (relative to web application context) to the *log4j.xml* configuration file, it can be used to setup per-application custom logging
enable-cache	true	Enable caching of framework-generated resources (JavaScript, CSS, images, etc.). For debug purposes development custom JavaScript or Style prevents to use old cached data in a browser
forceparser	true	Force parsing by a filter *HTML* syntax checker on any JSF page. If "false", only Ajax responses are parsed to syntax check and conversion to well-formed XML. Setting to "false" improves performance, but can provide visual effects on Ajax updates

4.2. Sun JSF RI

RichFaces works with any implementation of JSF (both JSF 1.1 and JSF 1.2) and with most JSF component libraries without any additional settings. For more information look at:

java.sun.com [http://java.sun.com/javaee/javaserverfaces/]

4.3. Apache MyFaces

RichFaces works with all Apache MyFaces versions (1.1.1 - 1.1.6) including specific libraries like TOMAHAWK Sandbox and Trinidad (the previous ADF Faces). However, there are some considerations to take into account for configuring applications to work with MyFaces and RichFaces.

There are some problems with different filters defined in the web.xml file clashing. To avoid these problems, the RichFaces filter must be the first one among other filters in the web.xml configuration file.

For more information look at:http://myfaces.apache.org

There's one more problem while using MyFaces + Seam. If you use this combination you should use **<a4j:page>** inside **<f:view>** (right after it in your code) wrapping another content inside your pages because of some problems in realization of **<f:view>** in myFaces.

The problem is to be overcome in the nearest future.

4.4. Facelets Support

A high-level support for Facelets is one of our main support features. When working with RichFaces, there is no difference what release of Facelets is used.

You should also take into account that some JSF frameworks such as Facelets use their own ViewHandler and need to have it first in the chain of ViewHandlers and the RichFaces AjaxViewHandler is not an exception. At first RichFaces installs its ViewHandler in any case, so in case of two frameworks, for example RichFaces + Facelets, no changes in settings are required. Although, when more then one framework (except RichFaces) is used, it's possible to use the VIEW_HANDLERS parameter defining these frameworks view handlers according to its usage order in it. For example, the declaration:

Example:

```
    <context-param>
      <param-name>org.ajax4jsf.VIEW_HANDLERS</param-name>
      <param-value>com.sun.facelets.FaceletViewHandler</param-value>
    </context-param>
```

says that Facelets will officially be the first, however AjaxViewHandler will be a little ahead temporarily to do some small, but very important job.

Note:

In this case you don't have to define FaceletViewHandler in the WEB-INF/faces-config.xml.

4.5. JBoss Seam Support

RichFaces now works out-of-the-box with JBoss Seam and Facelets running inside JBoss AS 4.0.4 and higher. There is no more shared JAR files needed. You just have to package the RichFaces library with your application.

Your web.xml for Seam 1.2 must be like this:

```
<?xml version="1.0" ?>
<web-app xmlns="http://java.sun.com/xml/ns/j2ee"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xsi:schemaLocation="http://java.sun.com/xml/ns/j2ee
 http://java.sun.com/xml/ns/j2ee/web-app_2_4.xsd"
        version="2.4">

    <!-- richfaces -->

    <filter>
        <display-name>RichFaces Filter</display-name>
        <filter-name>richfaces</filter-name>
        <filter-class>org.ajax4jsf.Filter</filter-class>
    </filter>

    <filter-mapping>
        <filter-name>richfaces</filter-name>
        <url-pattern>*.seam</url-pattern>
```

```
    </filter-mapping>

    <context-param>
        <param-name>org.ajax4jsf.VIEW_HANDLERS</param-name>
        <param-value>org.jboss.seam.ui.facelet.SeamFaceletViewHandler</param-value>
    </context-param>

    <!-- Seam -->

    <listener>
        <listener-class>org.jboss.seam.servlet.SeamListener</listener-class>
    </listener>

    <servlet>
        <servlet-name>Seam Resource Servlet</servlet-name>
        <servlet-class>org.jboss.seam.servlet.ResourceServlet</servlet-class>
    </servlet>

    <servlet-mapping>
        <servlet-name>Seam Resource Servlet</servlet-name>
        <url-pattern>/seam/resource/*</url-pattern>
    </servlet-mapping>

    <filter>
        <filter-name>Seam Filter</filter-name>
        <filter-class>org.jboss.seam.web.SeamFilter</filter-class>
    </filter>

    <filter-mapping>
        <filter-name>Seam Filter</filter-name>
        <url-pattern>/*</url-pattern>
    </filter-mapping>

   <!-- MyFaces -->

    <listener>

 <listener-class>org.apache.myfaces.webapp.StartupServletContextListener</listener-
class>
    </listener>

    <!-- JSF -->

    <context-param>
        <param-name>javax.faces.STATE_SAVING_METHOD</param-name>
        <param-value>client</param-value>
    </context-param>

    <context-param>
        <param-name>javax.faces.DEFAULT_SUFFIX</param-name>
        <param-value>.xhtml</param-value>
    </context-param>

    <servlet>
        <servlet-name>Faces Servlet</servlet-name>
        <servlet-class>javax.faces.webapp.FacesServlet</servlet-class>
        <load-on-startup>1</load-on-startup>
```

```
    </servlet>

    <servlet-mapping>
        <servlet-name>Faces Servlet</servlet-name>
        <url-pattern>*.seam</url-pattern>
    </servlet-mapping>

</web-app>
```

Seam 2 supports RichFaces Filter. Thus your web.xml for Seam 2 must be like this:

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="2.5"
    xmlns="http://java.sun.com/xml/ns/javaee"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
 http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd">

    <context-param>
        <param-name>org.ajax4jsf.VIEW_HANDLERS</param-name>
        <param-value>com.sun.facelets.FaceletViewHandler</param-value>
    </context-param>

    <!-- Seam -->

    <listener>
        <listener-class>org.jboss.seam.servlet.SeamListener</listener-class>
    </listener>

    <servlet>
        <servlet-name>Seam Resource Servlet</servlet-name>
        <servlet-class>org.jboss.seam.servlet.SeamResourceServlet</servlet-class>
    </servlet>

    <servlet-mapping>
        <servlet-name>Seam Resource Servlet</servlet-name>
        <url-pattern>/seam/resource/*</url-pattern>
    </servlet-mapping>

    <filter>
        <filter-name>Seam Filter</filter-name>
        <filter-class>org.jboss.seam.servlet.SeamFilter</filter-class>
    </filter>

    <filter-mapping>
        <filter-name>Seam Filter</filter-name>
        <url-pattern>/*</url-pattern>
    </filter-mapping>

    <!-- JSF -->

    <context-param>
        <param-name>javax.faces.DEFAULT_SUFFIX</param-name>
        <param-value>.xhtml</param-value>
    </context-param>
```

```
    <context-param>
        <param-name>facelets.DEVELOPMENT</param-name>
        <param-value>true</param-value>
    </context-param>

    <servlet>
        <servlet-name>Faces Servlet</servlet-name>
        <servlet-class>javax.faces.webapp.FacesServlet</servlet-class>
        <load-on-startup>1</load-on-startup>
    </servlet>

    <servlet-mapping>
        <servlet-name>Faces Servlet</servlet-name>
        <url-pattern>*.seam</url-pattern>
    </servlet-mapping>

</web-app>
```

Only one issue still persists while using Seam with MyFaces. Look at myFaces part of this section.

4.6. Portlet Support

JBoss Portlets have support since version Ajax4jsf 1.1.1. This support is improved in Richfaces 3.1.0. Provide your feedback on compatible with RichFaces if you face some problems.

4.7. Sybase EAServer

The load-on-startup for the Faces Servlet had to be set to 0 in web.xml.

Example:

```
...
      <servlet>
          <servlet-name>Faces Servlet</servlet-name>
          <servlet-class>javax.faces.webapp.FacesServlet</servlet-class>
          <load-on-startup>0</load-on-startup>
    </servlet>
...
```

This is because, EAServer calls servlet init() before the ServletContextInitializer. Not an EAServer bug, this is in Servlet 2.3 spec.

5

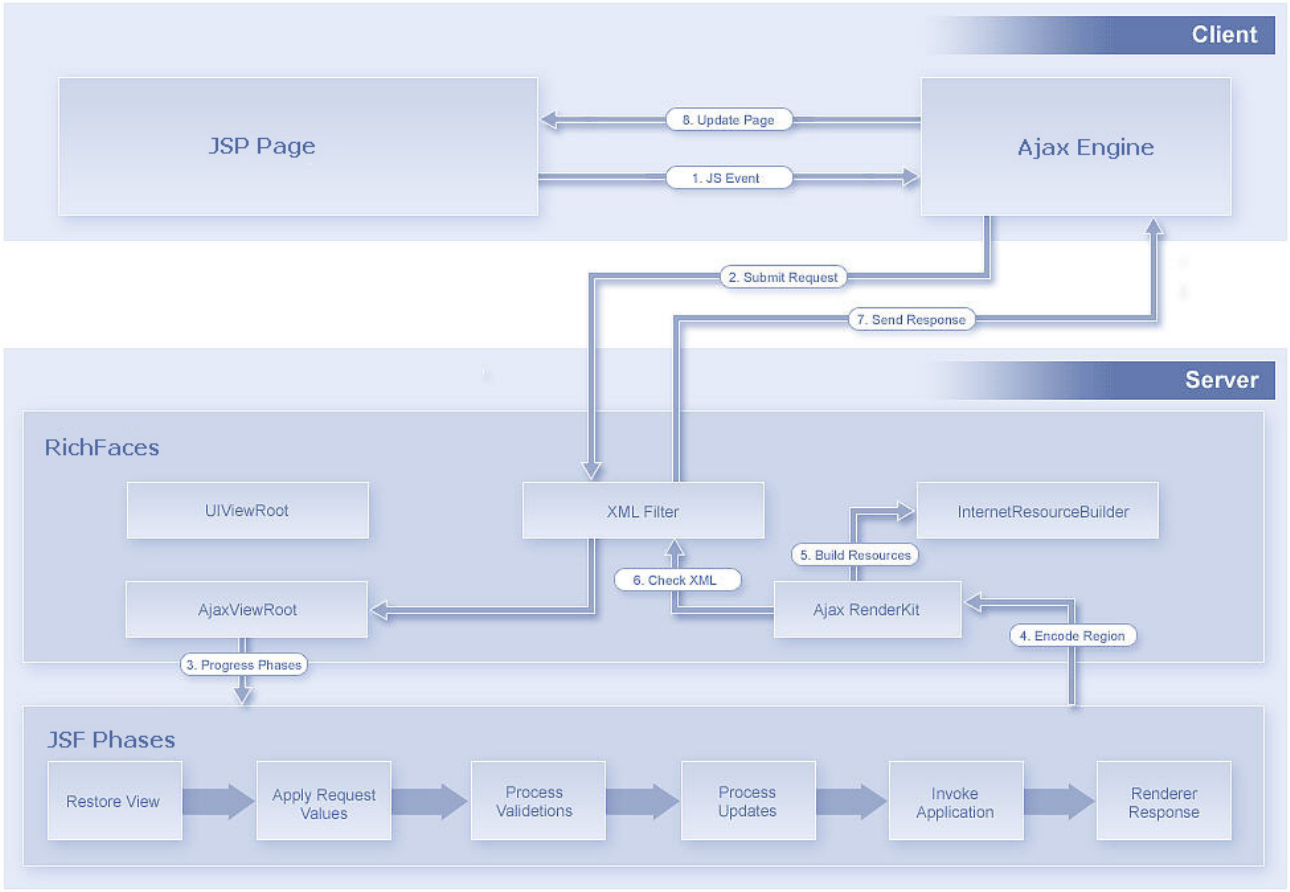
Basic concepts of the RichFaces Framework

5.1. Introduction

The framework is implemented as a component library which adds Ajax capability into existing pages, so you don't need to write any JavaScript code or to replace existing components with new Ajax widgets. RichFaces enables page-wide Ajax support instead of the traditional component-wide support. Hence, you can define the event on the page that invokes an Ajax request and the areas of the page that should be synchronized with the JSF Component Tree after the Ajax request changes the data on the server according to the events fired on the client.

Next Figure shows how it works:

Figure 5.1. Request Processing flow

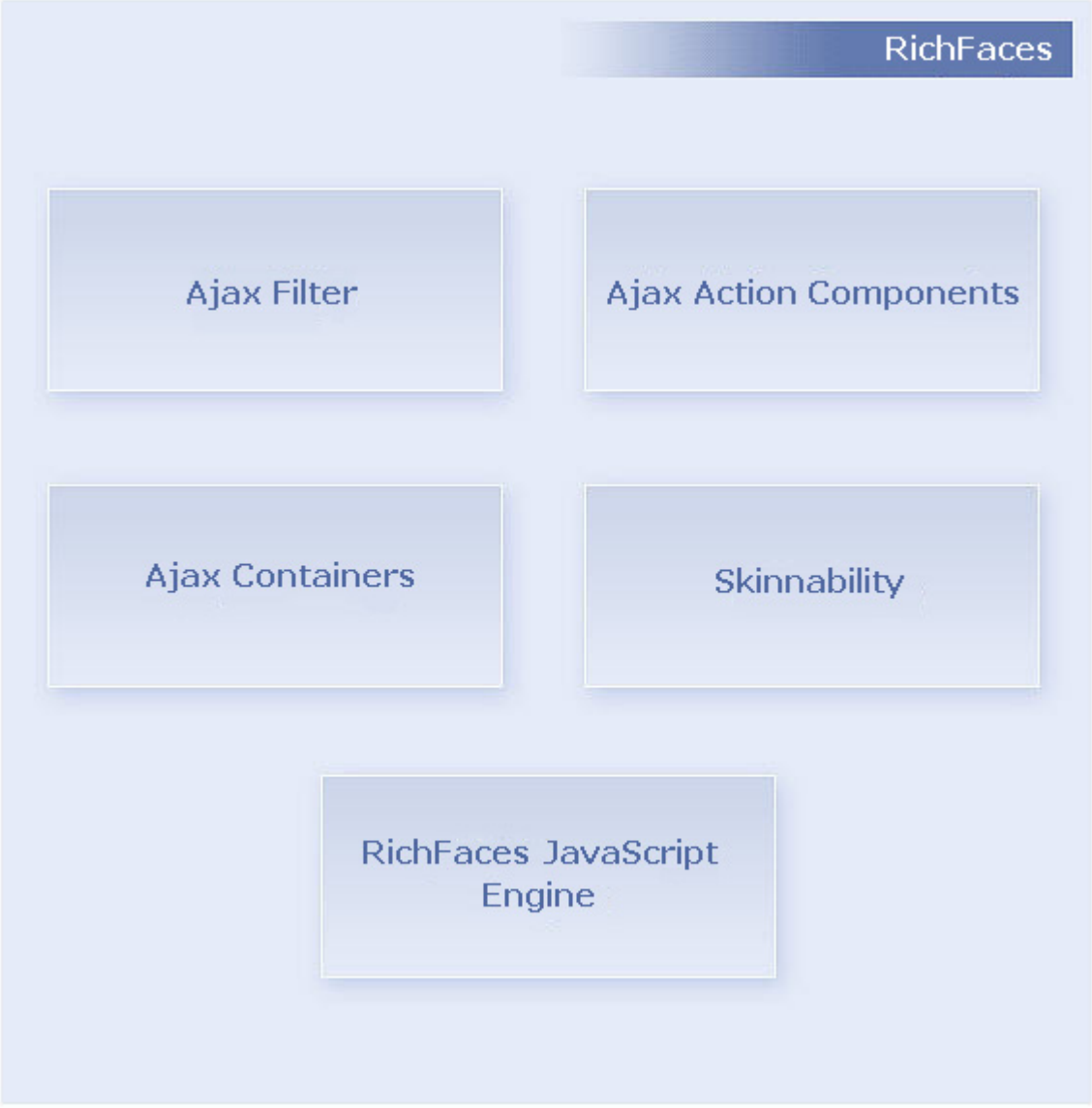


RichFaces allows to define (by means of JSF tags) different parts of a JSF page you wish to update with an Ajax request and provide a few options to send Ajax requests to the server. Also JSF page doesn't change from a "regular" JSF page and you don't need to write any JavaScript or XMLHttpRequest objects by hands, everything is done automatically.

5.2. RichFaces Architecture Overview

Next figure lists several important elements of the RichFaces framework

Figure 5.2. Core Ajax component structure

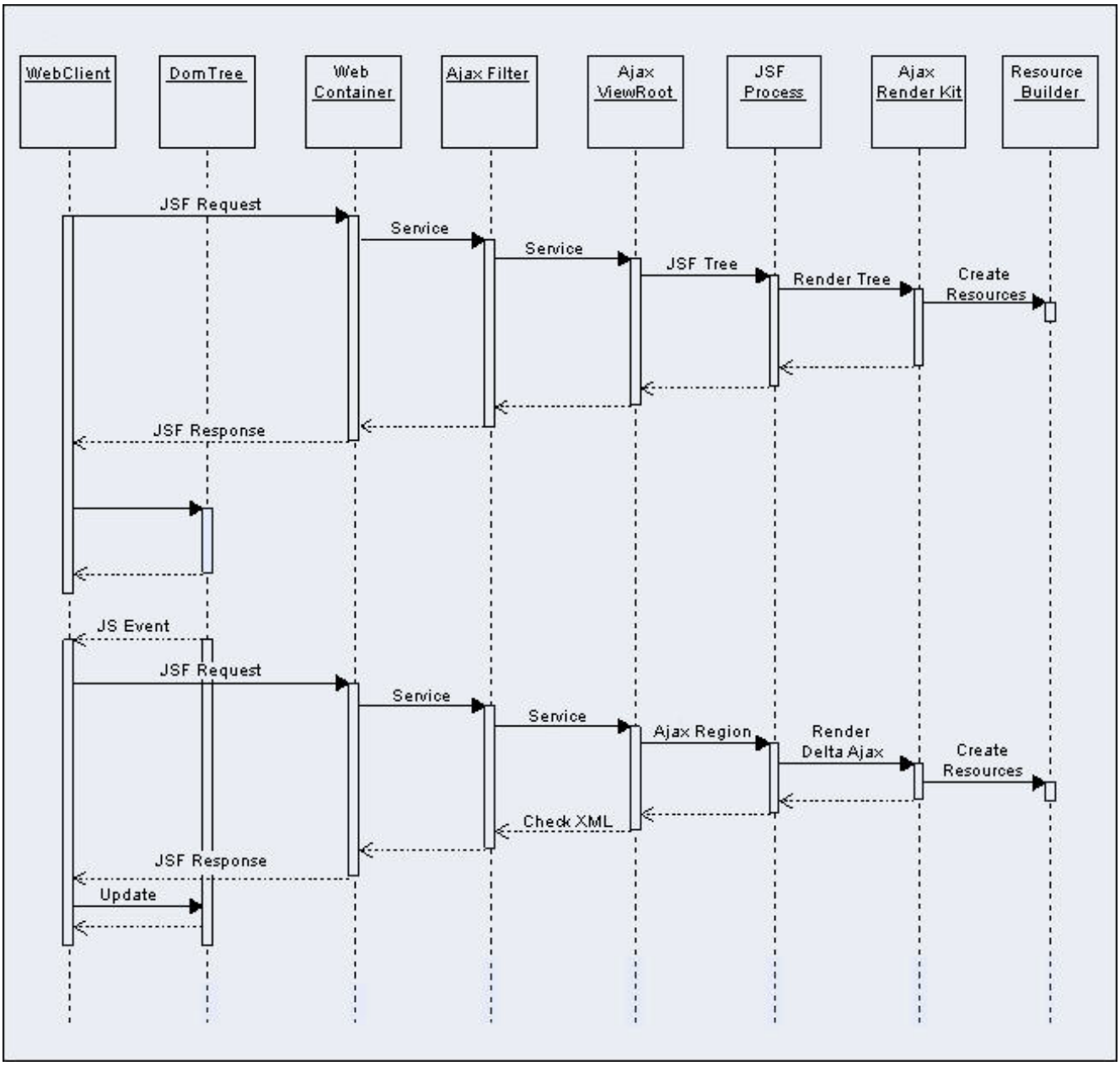


Ajax Filter. To get all benefits of RichFaces, you should register a Filter in web.xml file of your application. The Filter recognizes multiple request types. Necessary information about Filter configuration can be found in the "Filter configuration" section. The sequence diagram on Figure 3 shows the difference in processing of a "regular" JSF request and an Ajax request.

In the first case the whole JSF tree will be encoded, in the second one option it depends on the "size" of the Ajax region. As you can see, in the second case the filter parses the content of an Ajax response before sending it to the client side.

Have a look at the next picture to understand these two ways:

Figure 5.3. Request Processing sequence diagram

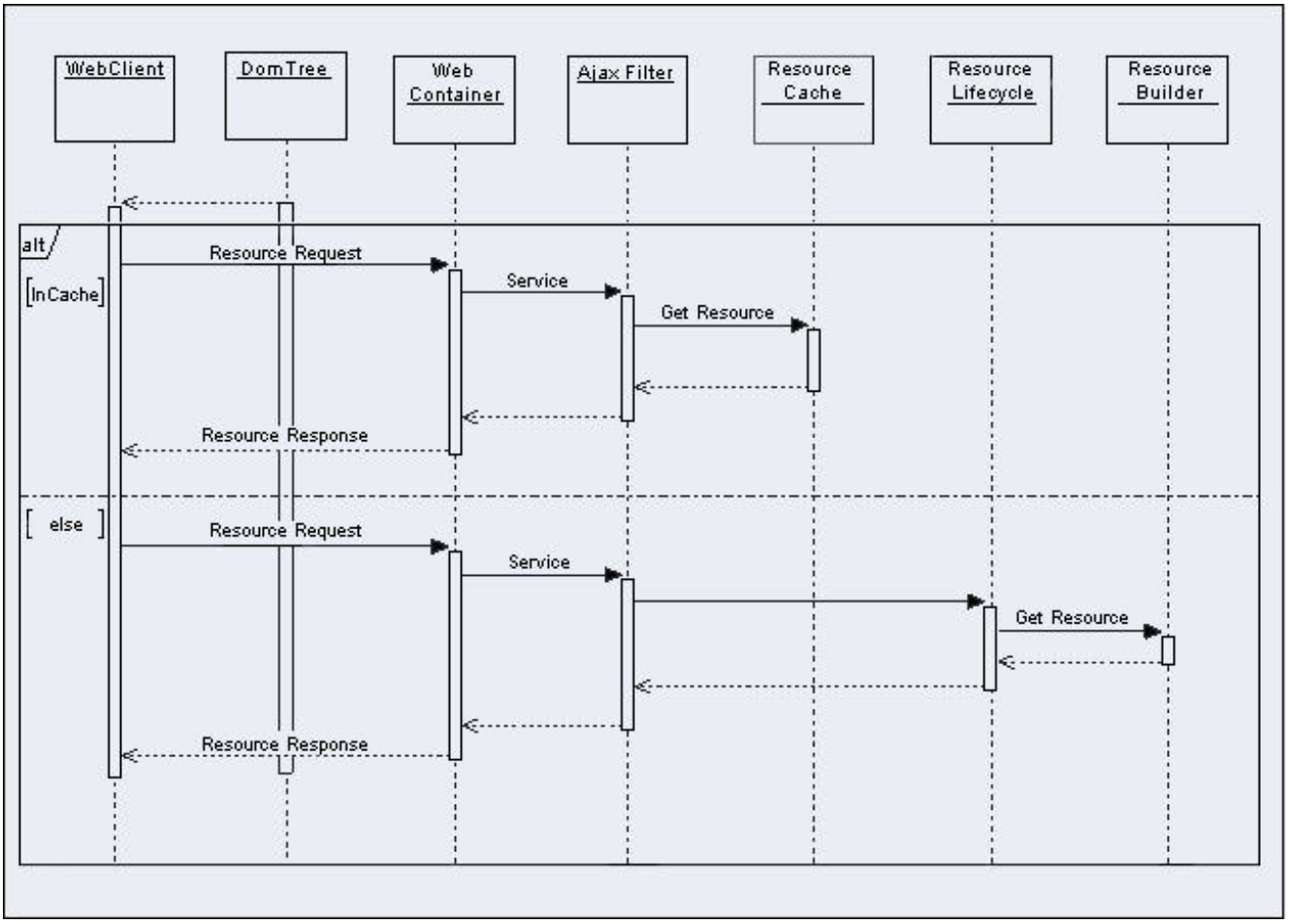


In both cases, the information about required static or dynamic resources that your application requests is registered in the ResourseBuilder class.

When a request for a resource comes (Figure 4), the RichFaces filter checks the Resource Cache for this resource and if it is there, the resource is sent to the client. Otherwise, the filter searches for the resource among those that are registered by the ResourceBuilder. If the resource is registered, the RichFaces filter will send a request to the ResourceBuilder to create (deliver) the resource.

Next Figure shows the ways of resource request processing.

Figure 5.4. Resource request sequence diagram



AJAX Action Components. There are Ajax Action Components: AjaxCommandButton, AjaxCommandLink, AjaxPoll and AjaxSupport and etc. You can use them to send Ajax requests from the client side.

AJAX Containers. AjaxContainer is an interface that describes an area on your JSF page that should be decoded during an Ajax request. AjaxViewRoot and AjaxRegion are implementations of this interface.

JavaScript Engine. RichFaces JavaScript Engine runs on the client-side. It knows how to update different areas on your JSF page based on the information from the Ajax response. Do not use this JavaScript code directly, as it is available automatically.

5.3. Limitations and Rules

In order to create RichFaces applications properly, keep the following points in mind:

- Any Ajax framework should not append or delete, but only replace elements on the page. For successful updates, an element with the same ID as in the response must exist on the page. If you'd like to append any code to a page, put in a placeholder for it (any empty element). For the same reason, it's recommended to place messages in the *"AjaxOutput"* component (as no messages is also a message).

- Don't use **<f:verbatim>** for self-rendered containers, since this component is transient and not saved in the tree.
- Ajax requests are made by XMLHttpRequest functions in XML format, but this XML bypasses most validations and the corrections that might be made in a browser. Thus, create only a strict standards-compliant code for HTML and XHTML, without skipping any required elements or attributes. Any necessary XML corrections are automatically made by the XML filter on the server, but lot's of unexpected effects can be produced by an incorrect HTML code.

5.4. Ajax Request Optimization

5.4.1. Re-Rendering

Ajax attributes are common for Ajax components such as **<a4j:support>** , **<a4j:commandButton>** , **<a4j:jsFunction>** , **<a4j:poll>** , **<a4j:push>** and so on. Also, most RichFaces components with built-in Ajax support have these attributes for a similar purpose. Ajax components attributes help RichFaces to expose its features. Most of the attributes have default values. Thus, you can start working with RichFaces without knowing the usage of these attribute. However, their usage allows to tune the required Ajax behavior very smoothly.

"reRender" is a key attribute. The attribute allows to point to area(s) on a page that should be updated as a response on Ajax interaction. The value of the *"reRender"* attribute is an id of the JSF component or an id list.

A simple example is placed below:

```
...
        <a4j:commandButton value="update" reRender="infoBlock"/>
            ...
        <h:panelGrid id="infoBlock">
            ...
        </h:panelGrid>
...
```

The value of *"reRender"* attribute of the **<a4j:commandButton>** tag defines which part(s) of your page is (are) to be updated. In this case, the only part of the page to update is the **<h:panelGrid>** tag because its ID value matches to the value of *"reRender"* attribute. As you see, it's not difficult to update multiple elements on the page, only list their IDs as the value of *"reRender"* .

"reRender" uses UIComponent.findComponent() algorithm [http://java.sun.com/javaee/javaserverfaces/1.2_MR1/docs/api/javax/faces/component/UIComponent.html#findComponent(java.lang.String)] (with some additional exceptions) to find the component in the component tree. As can you see, the algorithm presumes several steps. Each other step is used if the previous step is not successful. Therefore, you can define how fast the component is found mentioning it more precisely. The following example shows the difference in approaches (both buttons will work successfully):

```
...
    <h:form id="form1">
        ...
        <a4j: commandButton value="Usual Way" reRender="infoBlock, infoBlock2" />
```

```
        <a4j:commandButton value="Shortcut" reRender=":infoBlockl,:sv:infoBlock2" />
        ...
    </h:form>
    <h:panelGrid id="infoBlock">
        ...
    </h:panelGrid>
    ...
    <f:subview id="sv">
      <h:panelGrid id="infoBlock2">
        ...
      </h:panelGrid>
      ...
    </f:subview>
...
```

It's also possible to use JSF EL expression as a value of the reRender attribute. It might be a property of types Set, Collection, Array or simple String. The EL for reRender is resolved right before the Render Response phase. Hence, you can calculate what should be re-rendered on any previous phase during the Ajax request processing.

Most common problem with using reRender is pointing it to the component that has a *"reRender"* attribute. Note, that JSF does not mark the place in the browser DOM where the outcome of the component should be placed in case the *"rendered"* condition returns false. Therefore, after the component becomes rendered during the Ajax request, RichFaces delivers the rendered code to the client, but does not update a page, because the place for update is unknown. You need to point to one of the parent components that has no *"rendered"* attribute. As an alternative, you can wrap the component with **<a4j:outputPanel>** layout="none".

"ajaxRendered" attribute of the **<a4j:outputPanel>** set to "true" allows to define the area of the page that will be re-rendered even if it is not pointed in the reRender attribute explicitly. It might be useful if you have an area on a page that should be updated as a response on any Ajax request. For example, the following code allows to output error messages regardless of what Ajax request causes the Validation phase failed.

```
...
     <a4j:outputPanel ajaxRendered="true">
        <h:messages />
    </a4j:outputPanel>
...
```

"limitToList" attribute allows to dismiss the behavior of the **<a4j:outputPanel>** *"ajaxRendered"* attribute. "limitToList" = "false" means to update only the area(s) that mentioned in the "reRender" attribute explicitly. All output panels with "ajaxRendered"="true"is ignored. An example is placed below:

```
...
    <h:form>
       <h:inputText value="#{person.name}">
            <a4j:support event="onkeyup" reRender="test" limitToList="true"/>
        </h:inputText>
        <h:outputText value="#{person.name}" id="test"/>
    </form>
...
```

5.4.2. Queue and Traffic Flood Protection

"eventsQueue" attribute defines the name of the queue that will be used to order upcoming Ajax requests. By default, RichFaces does not queue Ajax requests. If events are produced simultaneously, they will come to the server simultaneously. JSF implementations (especially, the very first ones) does not guaranty that the request that comes first will be served or passed into the JSF lifecycle first. The order how the server side data will be modified in case of simultaneous request might be unpredictable. Usage of eventsQueue attribute allows to avoid possible mess. Define the queue name explicitly, if you expect intensive Ajax traffic in your application.

The next request posted in the same queue will wait until the previos one is not processed and Ajax Response is returned back if the *"eventsQueue"* attribute is defined. In addition, Richfaces starts to remove from the queue "similar" requests. "Similar"'requests are the requests produced by the same event. For example, according to the following code, only the newest request will be sent to the server if a user types very fast and has typed the several characters already before the previous Ajax Response is back.

```
...
    <h:inputText value="#{userBean.name}">
        <a4j:support event="onkeyup" eventsQueue="foo" reRender="bar" />
    </h:inputText>
...
```

"requestDelay" attribute defines the time (in ms) that the request will be wait in the queue before it is ready to send. When the delay time is over, the request will be sent to the server or removed if the newest "similar" request is in a queue already .

"ignoreDupResponses" attribute orders to ignore the Ajax Response produced by the request if the newest "similar" request is in a queue already. "ignoreDupResponses"="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response loses the actuality.

Defining the *"eventsQueue"* along with *"requestDelay"* allows to protect against unnecessary traffic flood and synchronizes Ajax requests order. If you have several sources of Ajax requests, you can define the same queue name there. This might be very helpful if you have Ajax components that invoke request asynchronously from the ones produced by events from users. For example, **<a4j:poll>** or **<a4j:push>** . In case the requests from such components modify the same data, the synchronization might be very helpful.

More information can be found on the RichFaces Users Forum [http://jboss.com/index.html?module=bb&op=viewtopic&t=105766].

"timeout" attribute is used for setting response waiting time on a particular request. If a response is not received during this time, the request is aborted.

5.4.3. Data Processing Options

RichFaces uses form based approach for Ajax request sending. This means each time, when a user click an Ajax button or **<a4j:poll>** produces an asynchronous request, the data from the closest JSF form is submitted with the XMLHTTPRequest object. The form data contains the values from the form input element and auxiliary information such as state saving data.

When *"ajaxSingle"* attribute value is "true", it orders to include only a value of the current component (along with **<f:param>** or **<a4j:action>** param values if any) to the request map. In case of **<a4j:support>** , it is a value of the parent component. An example is placed below:

```
...
    <h:form>
        <h:inputText value="#{person.name}">
            <a4j:support event="onkeyup" reRender="test" ajaxSingle="true"/>
        </h:inputText>
      <h:inputText value="#{person.middleName}"/>
    </form>
...
```

In this example the request contains only the input component causes the request generation, not all the components contained on a form, because of "ajaxSingle"="true" usage.

Note, that "ajaxSingle"="true" reduces the upcoming traffic, but does not prevent decoding other input components on the server side. Some JSF components, such as **<h:selectOneMenu>** do recognize the missing data in the request map value as a null value and try to pass the validation process with a failed result. Thus, use **<a4j:region>** to limit a part of the component tree that will be processed on the server side when it is required.

"immediate" attribute has the same purpose as any other non-JSF component. The default *"ActionListener"* should be executed immediately (i.e. during the Apply Request Values phase of a request processing lifecycle), rather than waiting until the Invoke Application phase. Using immediate="true" is one of the ways to have some data model values updated when other cannot be updated because of a problem with passing the Validation phase successfully. This might be important inside the **<h:dataTable>** like components where using **<a4j:region>** is impossible due to the **<h:dataTable>** component architecture.

"bypassUpdates" attribute allows to bypass the Update Model phase. It might be useful if you need to check user input against the available validator, but not to update the model with those data. Note, that an action will be invoked at the end of the Validation phase only if the Validation phase is passed successfully. The listeners of the Application phase will not be invoked in any case.

5.4.4. Action and Navigation

Ajax component is similar to any other non-Ajax JSF component like **<h:commandButton>** . It allows to submit the form. You can use *"action"* and *"actionListener"* attribute to invoke the action method and define the action event.

"action" method must return null if you want to have an Ajax Response with a partual page update. This is regular mode called "Ajax request generates Ajax Response". In case of action does not return null, but the action outcome that matches one of navigation rules, RichFaces starts to work in "Ajax request generates Non-Ajax Response" mode. This mode might be helpful in two major cases:

- RichFaces allows to organize a page flow inside the **<a4j:include>** component. This is a typical scenario for Wizard like behavior. The new content is rendered inside the **<a4j:include>** area. The content is taken from the navigation rule of the faces configuration file (usually, the faces-config.xml). Note, that the content of the "wizard" is not isolated from the rest of the page. The included page should

not have own **<f:view>** (it does not matter if you use facelets). You need to have an Ajax component inside the **<a4j:include>** to navigate between the wizard pages. Otherwize, the whole page update will be performed.

- If you want to involve the server side validators and navigate to the next page only if the Validation phase is passed successfully, you can replace **<h:commandButton>** with **<a4j:commandButton>** and point to the action method that navigates to the next page. If Validation process fails, the partial page update will occur and a user will see an error message. Otherwize, the application proceeds to the next page. Make sure, you define <redirect/> option for the navigation rule to avoid memory leaks.

5.4.5. JavaScript Interactions

RichFaces allows writing Ajax-enabled JSF application without writing any Javascript code. However, you can still invoke the javascript code if you need. There are several ajax attributes that helps to do it.

"onsubmit" attribute allows to invoke JavaScript code before an Ajax request is sent. If *"onsubmit"* returns "false", the Ajax request is canceled. The code of *"onsubmit"* is inserted before the RichFaces Ajax call. Hence, the *"onsubmit"* should not has a "return" statement if you want the Ajax request to be sent. If you are going to invoke a JavaScript function that returns "true" or "false", use the conditional statement to return something only when you need to cancel the request. For example:

```
...
    onsubmit="if (mynosendfunct()==false){return false}"
...
```

"onclick" attribute is similar to the *"onsubmit"* , but for clickable components such as **<a4j:commandLink>** and **<a4j:commandButton>** . If it returns "false", the Ajax request is canceled also.

"oncomplete" attribute allows to invoke the JavaScript code right after the Ajax Response is returned back and the DOM tree of the browser is updated. Richfaces registers the code for further invocation of XMLHTTP request object before an Ajax request is sent. This means the code will not be changed during processing of the request on the server if you use JSF EL value binding. Also, you cannot use "this'" inside the code, because it will not point the component where Ajax request was initiated.

"onbeforedomupdate" attrubute defines JavaScript code for call after Ajax response receiving and before updating DOM on a client side.

"data" attribute allows to get the additional data from the server during an Ajax call. You can use JSF EL to point the property of the managed bean and its value will be serialized in JSON format and be available on the client side. You can refer to it using the *"data"* variable. For example:

```
...
    <a4j:commandButton value="Update" data="#{userBean.name}"
 oncomplete="showTheName(data.name)" />
...
```

Richfaces allows to serialize not only primitive types into JSON format, but also complex types including arrays and collections. The beans should be serializable to be refered with *"data"* .

5.4.6. Iteration components Ajax attributes

"ajaxKeys" attribute defines strings that are updated after an Ajax request. It provides possibility to update several child components separately without updating the whole page.

```
...
    <a4j:poll intervall="1000" action="#{repeater.action}" reRender="text">
        <table>
            <tbody>
                <a4j:repeat value="#{bean.props}" var="detail"
 ajaxKeys="#{repeater.ajaxedRowsSet}">
                    <tr>
                        <td>
                            <h:outputText value="detail.someProperty" id="text"/>
                        </td>
                    </tr>
                </a4j:repeat>
            </tbody>
        </table>
    </a4j:poll>
...
```

5.4.7. Other useful attributes

"status" attribute for Ajax components (such as **<a4j:commandButton>** , **<a4j:poll>** , etc.) points to an ID of **<a4j:status>** component. Use this attribute if you want to share **<a4j:status>** component between different Ajax components from different regions. The following example shows it.

```
...
    <a4j:region id="extr">
        <h:form>
            <h:outputText value="Status:" />
            <a4j:status id="commonstatus" startText="In Progress...." stopText=""/>
            <h:panelGrid columns="2">
                <h:outputText value="Name"/>
                <h:inputText id="name" value="#{userBean.name}">
                    <a4j:support event="onkeyup" reRender="out" />
                </h:inputText>
                <h:outputText value="Job"/>
                <a4j:region  id="intr">
                    <h:inputText id="job" value="#{userBean.job}">
                        <a4j:support event="onkeyup"  reRender="out"
 status="commonstatus"/>
                   </h:inputText>
                </a4j:region>
            </h:panelGrid>

            <a4j:region>
                <h:outputText id="out" value="Name: #{userBean.name}, Job:
 #{userBean.job}" />
                <br />
                <a4j:commandButton ajaxSingle="true" value="Clean Up Form"
 reRender="name, job, out"  status="commonstatus">
                    <a4j:actionparam name="n" value=""  assignTo="#{userBean.name}"
 />
```

```
                    <a4j:actionparam name="j" value=""  assignTo="#{userBean.job}" />
                </a4j:commandButton>
            </a4j:region>
        </h:form>
    </a4j:region>
...
```

In the example **<a4j:support>** and **<a4j:commandButton>** are defined in different regions. Values of *"status"* attribute for these components points to an ID of **<a4j:support>** .Thus, the **<a4j:support>** component is shared between two components from different regions.

More information could be found here [http://livedemo.exadel.com/richfaces-demo/richfaces/status.jsf?c=status].

Other useful attribute is *"focus"* . It points to an ID of a component where focus will be set after an Ajax request.

5.5. How To...

5.5.1. Send an Ajax request

There are different ways to send Ajax requests from your JSF page. For example you can use **<a4j:commandButton>** , **<a4j:commandLink>, <a4j:poll>** or **<a4j:support>** tags or any other.

All these tags hide the usual JavaScript activities that are required for an XMHttpRequest object building and an Ajax request sending. Also, they allow you to decide which components of your JSF page are to be re-rendered as a result of the Ajax response (you can list the IDs of these components in the "reRender" attribute).

<a4j:commandButton> and **<a4j:commandLink>** tags are used to send an Ajax request on "onclick" JavaScript event.

<a4j:poll> tag is used to send an Ajax request periodically using a timer.

The **<a4j:support>** tag allows you to add Ajax functionality to standard JSF components and send Ajax request onto a chosen JavaScript event: "onkeyup", "onmouseover", etc.

5.5.2. Decide What to Send

You may describe a region on the page you wish to send to the server, in this way you can control what part of the JSF View is decoded on the server side when you send an Ajax request.

The easiest way to describe an Ajax region on your JSF page is to do nothing, because the content between the **<f:view>** and **</f:view>** tags is considered the default Ajax region.

You may define multiple Ajax regions on the JSF page (they can even be nested) by using the **<a4j:region>** tag.

If you wish to render the content of an Ajax response outside of the active region then the value of the "renderRegionOnly" attribute should be set to "false" ("false" is default value). Otherwise, your Ajax updates are limited to elements of the active region.

5.5.3. Decide What to Change

Using IDs in the "reRender" attribute to define "AJAX zones" for update works fine in many cases.

But you can not use this approach if your page contains, e.g. a **<f:verbatim>** tag and you wish to update its content on an Ajax response.

The problem with the **<f:verbatim/>** tag as described above is related to the value of the transientFlag of JSF components. If the value of this flag is true, the component must not participate in state saving or restoring of process.

In order to provide a solution to this kind of problems, RichFaces uses the concept of an output panel that is defined by the **<a4j:outputPanel>** tag. If you put a **<f:verbatim>** tag inside of the output panel, then the content of the **<f:verbatim/>** tag and content of other panel's child tags could be updated on Ajax response. There are two ways to control this:

- By setting the "ajaxRendered" attribute value to "true".
- By setting the "reRender" attribute value of an Action Component to the output panel ID.

5.6. Filter Configuration

RichFaces uses a filter for a correction of code received on an Ajax request. In case of a "regular" JSF request a browser makes correction independently. In case of Ajax request in order to prevent layout destruction it's needed to use a filter, because a received code could differ from a code validated by a browser and a browser doesn't make any corrections.

An example of how to set a Filter in a web.xml file of your application is placed below.

Example:

```
...
    <filter>
        <display-name>RichFaces Filter</display-name>
        <filter-name>richfaces</filter-name>
        <filter-class>org.ajax4jsf.Filter</filter-class>
    </filter>
...
```

Note:
Fast Filter is deprecated and available only for backward compatibility with previous RichFaces versions. Fast Filter usage isn't recomended, because there is another way to use its functionality by means of Neko filter type [28].

In RichFaces 3.1 filter configuration becomes more flexible. It's possible to configure different filters for different sets of pages for the same application.

The possible filter types are:

- TIDY

"TIDY" filter type based on the Tidy parser. This filter is recommended for applications with complicated or non-standard markup when all necessary code corrections are made by the filter when a response comes from the server.

- NEKO

"NEKO" filter type corresponds to the former "Fast Filter" and it's based on the Neko parser. In case of using this filter code isn't strictly verified. Use this one if you are sure that your application markup is really strict for this filter. Otherwise it could cause lot's of errors and corrupt a layout as a result. This filter considerably accelerates all Ajax requests processing.

- NONE

No correction.

An example of configuration is placed below.

Example:

```
...
    <context-param>
        <param-name>org.ajax4jsf.xmlparser.ORDER</param-name>
        <param-value>NONE,NEKO,TIDY</param-value>
    </context-param>

    <context-param>
        <param-name>org.ajax4jsf.xmlparser.NONE</param-name>
        <param-value>/pages/performance\.xhtml,/pages/default.*\.xhtml</param-value>
    </context-param>

    <context-param>
        <param-name>org.ajax4jsf.xmlparser.NEKO</param-name>
        <param-value>/pages/repeat\.xhtml</param-value>
    </context-param>

    <filter>
        <display-name>RichFaces Filter</display-name>
        <filter-name>richfaces</filter-name>
        <filter-class>org.ajax4jsf.Filter</filter-class>
    </filter>

    <filter-mapping>
        <filter-name>richfaces</filter-name>
        <servlet-name>Faces Servlet</servlet-name>
        <dispatcher>FORWARD</dispatcher>
        <dispatcher>REQUEST</dispatcher>
        <dispatcher>INCLUDE</dispatcher>
    </filter-mapping>
...
```

The example shows that ORDER parameter defines the order in which particular filter types are used for pages code correction.

First of all "NONE" type is specified for the filter. Then two different sets of pages are defined for which two filter types (NONE and NEKO) are used correspondingly. If a page relates to the first set that is defined in the following way:

```
<param-value>/pages/performance\.xhtml,/pages/default.*\.xhtml</param-value>,
```

it's not corrected, because filter type for this page is defined as "NONE". If a page is not from the first set, then "NEKO" type is set.

If a page relates to the second set that is defined in the following way:

```
<param-value>/pages/repeat\.xhtml</param-value>,
```

then "NEKO" filter type is used for correction. If it's not related to the second set, "TIDY" type is set for the filter ("TIDY" filter type is used for code correction).

5.7. Request Errors and Session Expiration Handling

RichFaces allows to redefine standard handlers responsible for processing of different exceptional situations. It helps to define own JavaScript, which is executed when these situations occur.

5.7.1. Request Errors Handling

To execute your own code on the client in case of an error during Ajax request, it's necessary to redefine the standard "A4J.AJAX.onError" method:

```
A4J.AJAX.onError = function(req,status,message) {
          // Custom Developer Code
};
```

The function defined this way accepts as parameters:

- req - a params string of a request that calls an error
- status - the number of an error returned by the server
- message - a default message for the given error

Thus, it's possible to create your own handler that is called on timeouts, inner server errors, and etc.

5.7.2. Session Expired Handling

It's possible to redefine also the *"onExpired"* framework method that is called on the *"Session Expiration"* event.

Example:

```
A4J.AJAX.onExpired = function(loc,expiredMsg){
          // Custom Developer Code
};
```

Here the function receives in params:

- loc - URL of the current page (on demand can be updated)
- expiredMsg - a default message on *"Session Expiration"* event.

5.8. Skinnability

5.8.1. Why Skinnability

If you have a look at a CSS file in an enterprise application, for example, the one you're working on now, you'll see how often the same color is noted in it. Standard CSS has no way to define a particular color abstractly for defining as a panel header color, a background color of an active pop-up menu item, a separator color, etc. To define common interface styles, you have to copy the same values over and over again and the more interface elements you have the more copy-and-paste activity that needs to be performed.

Hence, if you want to change the application palette, you have to change all interrelating values, otherwise your interface can appear a bit clumsy. The chances of such an interface coming about is very high, as CSS editing usually becomes the duty of a general developer who doesn't necessarily have much knowledge of user interface design.

Moreover, if a customer wishes to have an interface look-and-feel that can be adjusted on-the-fly by an end user, your work is multiplied, as you have to deal with several CSS files variants, each of which contains the same values repeated numerous times.

These problems can be solved with the skinnability system built into theRichFaces project and realized fully in RichFaces. Every named skin has some skin-parameters for the definition of a palette and the other parameters of the user interface. By changing just a few parameters, you can alter the appearance of dozens of components in an application in a synchronized fashion without messing up user interface consistency.

The skinnability feature can't completely replace standard CSS and certainly doesn't eliminate its usage. Skinnability is a high-level extension of standard CSS, which can be used together with regular CSS declarations. You can also refer to skin parameters in CSS via JSF Expression Language. You have the complete ability to synchronize the appearance of all the elements in your pages.

5.8.2. Using Skinnability

RichFaces skinnability is designed for mixed usage with:

- Skin parameters defined in the RichFaces framework
- Predefined CSS classes for components
- User style classes

The color scheme of the component can be applied to its elements using any of three style classes:

- A default style class inserted into the framework

  This contains style parameters linked to some constants from a skin. It is defined for every component and specifies a default representation level. Thus, an application interface could be modified by changing the values of skin parameters.

- A style class of skin extension

  This class name is defined for every component element and inserted into the framework to allow defining a class with the same name into its CSS files. Hence, the appearance of all components that use this class is extended.

- User style class

  It's possible to use one of the styleClass parameters for component elements and define your own class in it. As a result, the appearance of one particular component is changed according to a CSS style parameter specified in the class.

5.8.3. Example

Here is a simple panel component:

Example:

```
<rich:panel>
...
</rich:panel>
```

The code generates a panel component on a page, which consists of two elements: a wrapper ** ** element and a ** ** element for the panel body with the particular style properties. The wrapper ** ** element looks like:

Example:

```
<div class="dr-pnl rich-panel">
...
</div>
```

dr-pnl is a CSS class specified in the framework via skin parameters:

- background-color is defined with generalBackgroundColor
- border-color is defined with panelBorderColor

It's possible to change all colors for all panels on all pages by changing these skin parameters.

However, if a **<rich-panel>** class is specified somewhere on the page, its parameters are also acquired by all panels on this page.

A developer may also change the style properties for a particular panel. The following definition:

Example:

```
<rich:panel styleClass="customClass">
...
</rich:panel>
```

could add some style properties from customClass to one particular panel, as a result we get three styles:

Example:

```
<div class="dr_pnl rich-panel customClass">
...
</div>
```

5.8.4. Skin Parameters Tables in RichFaces

RichFaces provides eight predefined skin parameters (skins) at the simplest level of common customization:

- DEFAULT
- plain
- emeraldTown
- blueSky
- wine
- japanCherry
- ruby
- classic
- deepMarine

To plug one in, it's necessary to specify a skin name in the *"org.richfaces.SKIN"* context-param.

Here is an example of a table with values for one of the main skins, "blueSky".

Table 5.1. Colors

Parameter name	Default value
headerBackgroundColor	#BED6F8
headerGradientColor	#F2F7FF
headTextColor	#000000
headerWeightFont	bold
generalBackgroundColor	#FFFFFF
generalTextColor	#000000
generalSizeFont	11px
generalFamilyFont	Arial, Verdana, sans-serif
controlTextColor	#000000

Parameter name	Default value
controlBackgroundColor	#ffffff
additionalBackgroundColor	#ECF4FE
shadowBackgroundColor	#000000
shadowOpacity	1
panelBorderColor	#BED6F8
subBorderColor	#ffffff
tabBackgroundColor	#C6DEFF
tabDisabledTextColor	#8DB7F3
trimColor	#D6E6FB
tipBackgroundColor	#FAE6B0
tipBorderColor	#E5973E
selectControlColor	#E79A00
generalLinkColor	#0078D0
hoverLinkColor	#0090FF
visitedLinkColor	#0090FF

Table 5.2. Fonts

Parameter name	Default value
headerSizeFont	11px
headerFamilyFont	Arial, Verdana, sans-serif
tabSizeFont	11px
tabFamilyFont	Arial, Verdana, sans-serif
buttonSizeFont	11px
buttonFamilyFont	Arial, Verdana, sans-serif
tableBackgroundColor	#FFFFFF
tableFooterBackgroundColor	#cccccc
tableSubfooterBackgroundColor	#f1f1f1
tableBorderColor	#C0C0C0

Skin "plain" was added from 3.0.2 version. It doesn't have any parameters. It's necessary for embedding RichFaces components into existing projecst which have its own styles.

To get detailed information on particular parameter possibilities, see the chapter where each component has skin parameters described corresponding to its elements.

5.8.5. Creating and Using Your Own Skin File

In order to create your own skin file, do the following:

- Create a file and define in it skin constants which are used by style classes (see section "Skin Parameters Tables in RichFaces"). The name of skin file should correspond to the following format: <name>.skin.properties. As an example of such file you can see RichFaces predefined skin parameters (skins): blueSky, classic, deepMarine, etc. These files are located in the richfaces-impl-xxxxx.jar inside the /META-INF/skins folder.
- Add a skin definition <contex-param> to the web.xml of your application. An example is placed below:

  Example:

```
...
    <context-param>
        <param-name>org.richfaces.SKIN</param-name>
        <param-value>name</param-value>
    </context-param>
...
```

- Put your <name>.skin.properties file in one of the following classpath elements: META-INF/skins/ or classpath folder (e.g. WEB-INF/classes).

5.8.6. Built-in skinnability in RichFaces

RichFaces gives an opportunity to incorporate skinnability into UI design. With this framework you can easily use named skin parameters in properties files to control the appearance of the skins that are applied consistently to a whole set of components. You can look at examples of predefined skins at:

http://livedemo.exadel.com/richfaces-demo/

You may simply control the look-and-feel of your application by using the skinnability service of the RichFaces framework. With the means of this service you can define the same style for rendering standard JSF components and custom JSF components built with the help of RichFaces.

To find out more on skinnability possibilities, follow these steps:

- Create a custom render kit and register it in the faces-config.xml like this:

```
<render-kit>
        <render-kit-id>NEW_SKIN</render-kit-id>
        <render-kit-class>
            org.ajax4jsf.framework.renderer.ChameleonRenderKitImpl
        </render-kit-class>
</render-kit>
```

- Then you need to create and register custom renderers for the component based on the look-and-feel predefined variables:

```
<renderer>
        <component-family>javax.faces.Command</component-family>
        <renderer-type>javax.faces.Link</renderer-type>
        <renderer-class>
           newskin.HtmlCommandLinkRenderer
        </renderer-class>
</renderer>
```

- Finally, you need to place a properties file with skin parameters into the class path root. There are two requirements for the properties file:
  - The file must be named **<skinName>** .skin.properties, in this case, it would be called `newskin.skin.properties`.
  - The first line in this file should be render.kit= **<render-kit-id>,** in this case, it would be called render.kit=NEW_SKIN.

Extra information on custom renderers creation can be found at:

http://java.sun.com/javaee/javaserverfaces/reference/docs/index.html

6

The RichFaces Components

The library encompasses ready-made components built based on the *Rich Faces CDK*.

6.1. < a4j:ajaxListener >

The **<a4j:ajaxListener>** component is the same one as *"ActionListener"* or *"ValueChangeListener"* , but for an Ajax container.

Table 6.1. a4j : ajaxListener attributes

Attribute Name	Description
type	Fully qualified Java class name of an AjaxListener to be created and registered.

Table 6.2. Component identification parameters

Name	Value
listener-class	org.ajax4jsf.framework.ajax.AjaxListener
event-class	org.ajax4jsf.framework.ajax.AjaxEvent
tag-class	org.ajax4jsf.taglib.html.jsp.AjaxListenerTag

6.1.1. Creating on a page

Simple Component definition on a page:

Example:

```
...
 <a4j:ajaxListener type="demo.Bean"/>
...
```

6.1.2. Dynamical creation of a component from Java code

Example:

```
package demo;

public class ImplBean implements import org.ajax4jsf.component.html.AjaxListener{
 ...
```

```
}
```

```
import demo.ImplBean;
...
ImplBean myListener = new ImplBean();
...
```

6.1.3. Key attributes and ways of usage

Additional to the listeners provided by JSF specification, RichFaces add one more: Ajax Listener (**<a4j:ajaxListener>**). Ajax Listener is invoked before the Render Response phase. Instead of Action Listener of Value Change Listener which are not invoked when Validation of Update Model phases failed, Ajax Listener is guarantied to be invoked for each Ajax response. Thus, it is a good place for update the list of re-rendered components, for example. Ajax Listener is not invoked for non-Ajax request and when RichFaces works in "Ajax Request generates Non-Ajax Response" mode. Therefore, Ajax Listener invocation is a good indicator that Ajax response is going to be processed. Attribute "type" defines the fully qualified Java class name for listener. This class should implement org.ajax4jsf.framework.ajax.AjaxListener interface. You can access to the source of the event (Ajax component) using event.getSource() call.

Example:

```
...
 <a4j:commandLink id="cLink" value="Click it To Send Ajax Request">
  <a4j:ajaxListener type="demo.Bean"/>
 </a4j:commandLink>
...
```

Example:

```
package demo;

import org.ajax4jsf.framework.ajax.AjaxEvent;

public class Bean implements org.ajax4jsf.framework.ajax.AjaxListener{
...
 public void processAjax(AjaxEvent arg0){
  //Custom Developer Code
 }
...
}
```

6.1.5. Relevant resources links

Some additional information about usage of component can be found here. [http://livedemo.exadel.com/richfaces-demo/richfaces/ajaxListener.jsf?c=ajaxListener]

6.2. < a4j:keepAlive >

The **<a4j:keepAlive>** component allows to keep a state of each bean between requests.

Table 6.3. a4j : keepAlive attributes

Attribute Name	Description
ajaxOnly	if true, bean value restored in ajax requests only.
beanName	name of bean for EL-expressions.

Table 6.4. Component identification parameters

Name	Value
component-type	org.ajax4jsf.components.KeepAlive
component-family	org.ajax4jsf.components.AjaxKeepAlive
component-class	org.ajax4jsf.components.AjaxKeepAlive

6.2.1. Creating on a page

Simple Component definition on a page:

Example:

```
<a4j:keepAlive beanName = "#{myClass.testBean}"/>
```

6.2.2. Dynamical creation of a component from Java code

Example:

```
import org.ajax4jsf.ajax.AjaxKeepAlive;
...
AjaxKeepAlive myKeepAlive = new AjaxKeepAlive();
...
```

6.2.3. Key attributes and ways of usage

If a managed bean is declared with 'request' scope in the configuration file with the help of 'managed-bean-scope' tag then the life-time of this bean instance is valid only for the current request. Any attempts to make a reference to the bean instance after the request end will throw in Illegal Argument Exception by the server. To avoid these kinds of Exception, component **<a4j:keepAlive>** is used to maintain the state of the whole bean object among subsequent request.

Example:

```
<a4j:keepAlive beanName = "#{myClass.testBean}"/>
```

Note that the attribute 'beanName' must point to a legal jsf EL expression which resolves to a managed mean instance. For example for the above code the class definition may look like this:

```
        class MyClass{
```

```
 ...
 private TestBean testBean;
 // Getters and Setters for testBean.
 ...
}
```

6.2.4. Relevant resources links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/keepAlive.jsf?c=keepAlive] you can see the example of **<a4j:keepAlive>** usage and sources for the given example.

Some additional information about usage of component can be found here. [http://jboss.com/index.html?module=bb&op=viewtopic&t=104989]

6.3. < a4j:jsFunction >

6.3.1. Description

The **<a4j:jsFunction>** component allows to invoke the server side data and return it in a JSON format to use in a client JavaScript calls.

Table 6.5. a4j : jsFunction attributes

Attribute Name	Description
action	MethodBinding pointing at the application action to be invoked, if this UIComponent is activated by the user, during the Apply Request Values or Invoke Application phase of the request processing lifecycle, depending on the value of the immediate property
actionExpression	The action method binding expression.
actionListener	MethodBinding pointing at method accepting an ActionEvent with return type void
ajaxSingle	if "true", submits ONLY one field/link, instead of all form controls
binding	The attribute takes a value-binding expression for a component property of a backing bean
bypassUpdates	If "true", after process validations phase it skips updates of model beans on a force render response. It can be used for validating components input
data	Serialized (on default with JSON) data passed on the client by a developer on AJAX request. It's accessible via "data.foo" syntax
eventsQueue	

Attribute Name	Description
	Name of requests queue to avoid send next request before complete other from same event. Can be used to reduce number of requests of frequently events (key press, mouse move etc.)
focus	id of element to set focus after request completed on client side
id	Every component may have a unique id that is automatically created if omitted
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response isn't actual now
immediate	True means, that the default ActionListener should be executed immediately (i.e. during Apply Request Values phase of the request processing lifecycle), rather than waiting until the Invoke Application phase
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. If "false" (default) updates all rendered by ajax region components
name	Name of generated JavaScript function definition
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
oncomplete	JavaScript code for call after request completed on client side
rendered	If "false", this component is not rendered
requestDelay	Attribute defines the time (in ms.) that the request will be wait in the queue before it is ready to send. When the delay time is over, the request will be sent to the server or removed if the newest 'similar' request is in a queue already
reRender	Id['s] (in format of call UIComponent.findComponent()) of components, rendered in case of AjaxRequest caused by this component. Can be single id, comma-separated list of Id's, or EL Expression with array or Collection

Attribute Name	Description
status	ID (in format of call UIComponent.findComponent()) of Request status component
timeout	Response waiting time on a particular request. If a response is not received during this time, the request is aborted

Table 6.6. Component identification parameters

Name	Value
component-type	org.ajax4jsf.Function
component-family	org.ajax4jsf.components.AjaxFunction
component-class	org.ajax4jsf.component.html.HtmlAjaxFunction
renderer-type	org.ajax4jsf.components.AjaxFunctionRenderer

6.3.2. Creating on a page

Simple component definition example:

Example:

```
...
<head>
 <script>
  <!--There is some script named "myScript" that uses parameters which will be taken
 from server-->
 </script>
</head>
<body>
...
<a4j:jsFunction data="#{bean.someProperty}" name="callScript"
 oncomplete="myScript(data.subProperty1, data.subProperty2)"/>
...
```

The script *"myScript"* will be called after bean.someProperty data will be returned from server(e.g. It'll be object with two subproperties).

6.3.3. Dynamical creation of a component from Java code

Example:

```
import org.ajax4jsf.component.html.HtmlAjaxFunction;
...
HtmlAjaxFunction myFunction = new HtmlAjaxFunction();
...
```

6.3.4. Key attributes and ways of usage

As the component uses Ajax request to get data from server - it has all common Ajax Action attributes. Hence, "action" and *"actionListener"* can be invoked, and reRendering some parts of the page fired after calling function.

When using the **<a4j:jsFunction>** it's possible to initiate the Ajax request from the JavaScript and perform partial update of a page and/or invoke the JavaScript function with data returned by Ajax response.

```
...
<body onload="callScript()">
    ...
    <h:form>
    ...
    <a4j:jsFunction name="callScript" data="#{bean.someProperty1 }
                    "reRender="someComponent" oncomplete="myScript(data.subProperty1,
 data.subProperty2)">
        <a4j:actionparam name="param_name" assignTo="#{bean.someProperty2}">
        </a4j:actionparam>
    </a4j:jsFunction>
    ...
    </h:form>
    ...
</body>
...
```

The **<a4j:jsFunction>** allows to use **<a4j:actionparam>** or pure **<f:param>** for passing any number of parameters of the JavaScript function into Ajax request. **<a4j:jsFunction>** is similar to **<a4j:commandButton>** , but it could be activated from the JavaScript code. It allows to invoke some server side functionality and use the returned data in the JavaScript function invoked from *"oncomplete"* attribute. Hence it's possible to use **<a4j:jsFunction>** instead of **<a4j:commandButton>** . You can put it anywhere, just don't forget to use <h:form> ... </h:form> around it.

6.3.5. Relevant resources links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/jsFunction.jsf?c=jsFunction] you can see the example of **<a4j:jsFunction>** usage and sources for the given example.

6.4. < a4j:status >

6.4.1. Description

The **<a4j:status>** component generates elements for displaying of the current Ajax requests status. There are two status modes: Ajax request is in process or finished.

Table 6.7. a4j : status attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean

Attribute Name	Description
dir	Direction indication for text that does not inherit directionality. Valid values are "LTR" (left-to-right) and "RTL" (right-to-left)
for	ID of the AjaxContainer component whose status is indicated (in the format of a javax.faces.UIComopnent.findComponent() call).
forceId	If true, render the ID of the component in HTML code without JSF modifications.
id	Every component may have a unique id that is automatically created if omitted
lang	Code describing the language used in the generated markup for this component
layout	Define visual layout of panel, can be "block" or "inline".
onclick	HTML: a script expression; a pointer button is clicked
ondblclick	HTML: a script expression; a pointer button is double-clicked
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
onstart	JavaScript code, called on the start of a request.
onstop	JavaScript code, called on the stop of a request.
rendered	If "false", this component is not rendered
startStyle	CSS style class for the element displayed on the start of a request.

Attribute Name	Description
startStyleClass	CSS style class for the element displayed on the start of a request.
startText	Text for display on starting request.
stopStyle	CSS style for element displayed on request completion.
stopStyleClass	CSS style class for element displayed on request
stopText	Text for display on request complete.
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
title	Advisory title information about markup elements generated for this component

Table 6.8. Component identification parameters

Name	Value
component-type	org.ajax4jsf.Status
component-family	javax.faces.Panel
component-class	org.ajax4jsf.component.html.HtmlAjaxStatus
renderer-type	org.ajax4jsf.components.AjaxStatusRenderer

6.4.2. Creating on a page

There are two ways to define elements indicating a request status :

- With *"StartText"/"StopText"* atributes:

```
<a4j:status startText="Progress" stopText="Done" for="stat1">
```

  In this case, text elements for the corresponding status are generated.

- With "Start"/"Stop" facets definition:

```
<a4j:status for="stat2">
 <f:facet name="start">
  <h:graphicImage value="ajax_process.gif" />
 </f:facet>
 <f:facet name="stop">
  <h:graphicImage value="ajax_stoped.gif" />
 </f:facet>
</a4j:status>
```

  In this case, the elements are generated for each status and correspond the facets content.

6.4.3. Dynamical creation of a component from Java code

Example:

```
import org.ajax4jsf.component.html.HtmlAjaxStatus;
...
HtmlAjaxStatus  myStatus = new HtmlAjaxStatus();
...
```

6.4.4. Key attributes and ways of usage

There are two ways for the components or containers definition, which Ajax requests status is tracked by a component.

- Definition with the *"for"* attribute on the **<a4j:status>** component. Here *"for"* attribute should point at an Ajax container (**<a4j:region>**) "id", which requests are tracked by a component.
- Definition with the *"status"* attribute obtained by any RichFaces library action component. The attribute should point at the **<a4j:status>** component "id". Then this **<a4j:status>** component shows the status for the request fired from this action component.

The component creates two **** or ** ** elements depending on attribute "layout" with content defined for each status, one of the elements (start) is initially hidden. At the beginning of an Ajax request, elements state is inversed, hence the second element is shown and the first is hidden. At the end of a response processing, elements display states return to its initial values.

Example:

```
<a4j:status startText="Started" stopText="stopped" />
```

is decoded on a page as:

```
<span id="j_id20:status.start" style="display: none">
      Started
</span>
<span id="j_id20:status.stop">
        Stopped
</span>
```

And after the generation of an Ajax response is changed to:

```
<span id="j_id20:status.start">
        Started
</span>
<span id="j_id20:status.stop" style="display: none">
        Stopped
</span>
```

There is a possibility to group a **<a4j:status>** elements content into ** ** elements, instead of **** . To use it, just redefine the *"layout"* attribute from "inline"(default) to "block".

6.4.5. Relevant resources links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/status.jsf?c=status] you can see the example of **<a4j:status>** usage and sources for the given example.

6.5. < a4j:portlet >

6.5.1. Description

The **<a4j:portlet>** can be used in portals. The main component purpose is realization of possibility to create several instances the same portlet on one page.

Table 6.9. a4j : portlet attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
id	Every component may have a unique id that is automatically created if omitted
rendered	If "false", this component is not rendered

Table 6.10. Component identification parameters

Name	Value
component-type	org.ajax4jsf.Portlet
component-family	org.ajax4jsf.component.Portlet
component-class	org.ajax4jsf.component.html.HtmlPortlet

6.5.2. Creating on a page

```
<f:view>
 <a4j:portlet>
 ...
 </a4j:portlet>
</f:view>
```

6.5.3. Dynamical creation of a component from Java code

```
import org.ajax4jsf.component.html.HtmlPortlet;
...
HtmlPortlet myPortlet = new HtmlPortlet();
...
```

6.5.4. Key attributes and ways of usage

Portal page can include some instances of the same portlet but clientId of elements should be different for each window. In that case 'namespace' is used for each portlet. The **<a4j:portlet>** implemets NaimingContainer interface and adds namespace to all componets on a page. All portlet content should be wrapped by **<a4j:portlet>** for resolving problems mentioned before.

6.5.5. Relevant resources links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/portlet.jsf?c=portlet] you can see the example of **<a4j:portlet>** usage and sources for the given example.

The aditional information about component usage you can find here: Ajax4Jsf Users Forum. [http://www.jboss.com/index.html?module=bb&op=viewtopic&t=107325]

Portlet Sample could be checked out from JBoss SVN: portal-echo application. [http://anonsvn.jboss.org/repos/ajax4jsf/trunk/samples/portal-echo/]

Usage instructions for this demo could be found at the corresponding: portal-echo application. [http://www.jboss.com/index.html?module=bb&op=viewtopic&t=107325]

6.6. < a4j:push >

6.6.1. Description

The **<a4j:push>** periodically perform Ajax request to server, to simulate 'push' data.

Table 6.11. a4j : push attributes

Attribute Name	Description
action	MethodBinding pointing at the application action to be invoked, if this UIComponent is activated by the user, during the Apply Request Values or Invoke Application phase of the request processing lifecycle, depending on the value of the immediate property
actionExpression	The action method binding expression.
actionListener	MethodBinding pointing at method accepting an ActionEvent with return type void
ajaxSingle	if "true", submits ONLY one field/link, instead of all form controls
binding	The attribute takes a value-binding expression for a component property of a backing bean
bypassUpdates	If "true", after process validations phase it skips updates of model beans on a force render response. It can be used for validating components input

Attribute Name	Description
data	Serialized (on default with JSON) data passed on the client by a developer on AJAX request. It's accessible via "data.foo" syntax
enabled	Enable/disable pushing
eventProducer	MethodBinding pointing at method accepting an PushEventListener with return type void. User bean must register this listener and send EventObject to this listener on ready.
eventsQueue	Name of requests queue to avoid send next request before complete other from same event. Can be used to reduce number of requests of frequently events (key press, mouse move etc.)
focus	id of element to set focus after request completed on client side
id	Every component may have a unique id that is automatically created if omitted
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response isn't actual now
immediate	True means, that the default ActionListener should be executed immediately (i.e. during Apply Request Values phase of the request processing lifecycle), rather than waiting until the Invoke Application phase
interval	Interval (in ms) for call push requests. Default value 1000 (1 sec)
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. If "false" (default) updates all rendered by ajax region components
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
oncomplete	JavaScript code for call after request completed on client side
rendered	If "false", this component is not rendered

Attribute Name	Description
reRender	Id['s] (in format of call UIComponent.findComponent()) of components, rendered in case of AjaxRequest caused by this component. Can be single id, comma-separated list of Id's, or EL Expression with array or Collection
status	ID (in format of call UIComponent.findComponent()) of Request status component
timeout	Timeout (in ms) for request

Table 6.12. Component identification parameters

Name	Value
component-type	org.ajax4jsf.Push
component-family	org.ajax4jsf.components.AjaxPush
component-class	org.ajax4jsf.component.html.AjaxPush
renderer-type	org.ajax4jsf.components.AjaxPushRenderer

6.6.2. Creating on a page

```
<a4j:push reRender="msg" eventProducer="#{messageBean.addListener}" interval="3000"/>
```

6.6.3. Dynamical creation of a component from Java code

```
import org.ajax4jsf.component.html.AjaxPush;
...
AjaxPush myPush = new AjaxPush();
...
```

6.6.4. Key attributes and ways of usage

The **<a4j:push>** implements reverse Ajax technique. The component makes requests to minimal code (not to JSF tree) in order to check presence of messages in a queue. If a message exists, a complete request is performed. **<a4j:push>** registers EventListener in the bean, which receives messages about an event presence.

The bean, for example, could be subscribed to Java Messaging Service (JMS [http://java.sun.com/products/jms/]) topic or it could be implemented as Message Driven Bean (MDB) in order to send a message to the **<a4j:push>** component about an event presence. In the presence of the event some action occurs.

Thus, a work paradigm with the **<a4j:push>** component corresponds to an anisochronous model, but not to pools as for **<a4j:poll>** component. See the simplest example below:

Example:

```
...
class MyPushEventListener implements PushEventListener {
    public void onEvent(EventObject evt) {
        System.out.println(evt.getSource());
            //Some action
    }
...
```

Code for EventListener registration in the bean is placed below:

Example:

```
...
public void addListener(EventListener listener) {
synchronized (listener) {
        if (this.listener != listener) {
        this.listener = (PushEventListener) listener;
}
...
```

A page code for this example is placed below.

Example:

```
...
    <a4j:status startText="in progress" stopText="done"/>
     <a4j:form>
        <a4j:region>
            <a4j:push reRender="msg" eventProducer="#{pushBean.addListener}"
 interval="2000"/>
        </a4j:region>
        <a4j:outputPanel id="msg" >
            <h:outputText value="#{pushBean.date}">
                <f:convertDateTime type="time"/>
            </h:outputText>
        </a4j:outputPanel>
        <a4j:commandButton value="Push!!" action="#{pushBean.push}"
 ajaxSingle="true"/>
    </a4j:form>
...
```

The example shows how date is updated on a page in compliance with data taken from a server. In the example *"interval"* attribute has value "2000". This attribute defines an interval in milliseconds between the previous response and the next request. Default value is set to "1000" milliseconds (1 second). It's possible to set value equal to "0". In this case connection is permanent.

The *"timeout"* attribute defines response waiting time in milliseconds. If a response isn't received during this period a connection is aborted and the next request is sent. Default value for *"timeout"* attribute isn't set. Usage of *"interval"* and *"timeout"* attributes gives an opportunity to set short polls of queue state or long connections, or permanent connection.

Note:

The form around the **<a4j:push>** component is required.

6.6.5. Relevant resources links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/push.jsf?c=push] you can see the example of **<a4j:push>** usage and sources for the given example.

6.7. < a4j:repeat >

6.7.1. Description

The **<a4j:repeat>** component implements a basic iteration component allowing to update a set of its children with AJAX.

Table 6.13. a4j : repeat attributes

Attribute Name	Description
ajaxKeys	This attribute defines strings that are updated after an AJAX request.
binding	The attribute takes a value-binding expression for a component property of a backing bean
componentState	It defines EL-binding for a component state for saving or redefinition.
first	A zero-relative row number of the first row to display
id	Every component may have a unique id that is automatically created if omitted
rendered	If "false", this component is not rendered
rowKeyVar	The attribute provides access to a row key in a Request scope.
rows	A number of rows to display, or zero for all remaining rows in the table
stateVar	The attribute provides access to a component state on the client side.
value	The current value for this component.
var	A request-scope attribute via which the data object for the current row will be used when iterating

Table 6.14. Component identification parameters

Name	Value
component-type	org.ajax4jsf.Repeat
component-family	javax.faces.Data

Name	Value
component-class	org.ajax4jsf.component.html.HtmlAjaxRepeat
renderer-type	org.ajax4jsf.components.RepeatRenderer

6.7.2. Creating on a page

The component definition on a page is the same as for the *"facelets"* component:

```
<a4j:repeat id="detail" value="#{bean.props}" var="detail">
 <h:outputText value="#{detail.someProperty}"/>
</a4j:repeat>
```

The output is generated according to a collection contained in *"bean.props"* with the *"detail"* key passed to child components.

6.7.3. Dynamical creation of a component from Java code

Example:

```
import org.ajax4jsf.component.html.HtmlAjaxRepeat;
...
HtmlAjaxRepeat repeater = new HtmlAjaxRepeat ();
...
```

6.7.4. Key attributes and ways of usage

The main difference of this component from iterative components of other libraries is a special *"ajaxKeys"* attribute. This attribute defines strings that are updated after an Ajax request. As a result it becomes easier to update several child components separately without updating the whole page.

```
...
    <a4j:poll intervall="1000" action="#{repeater.action}" reRender="text">
        <table>
            <tbody>
                <a4j:repeat value="#{bean.props}" var="detail"
 ajaxKeys="#{repeater.ajaxedRowsSet}">
                    <tr>
                        <td>
                            <h:outputText value="detail.someProperty" id="text"/>
                        </td>
                    </tr>
                </a4j:repeat>
            </tbody>
        </table>
    </a4j:poll>
...
```

Thus, a list with a table structure from *"bean.props"* is output.

In the above-mentioned example the component **<a4j:poll>** sends Ajax requests every second, calling the *"action"* method of the *"repeater"* bean.

Note:

The **<a4j:repeater>** component is defined as fully updated, but really updated there are only the strings which rowKeys includes into the set *"ajaxRowSet"* defined in the *"ajaxKeys"* attribute

The set could be defined during the action method processing using data on a model from the property *"repeater.myRepeat"*

One more benefit of this component is absence of strictly defined markup as JSF HTML DataTable and TOMAHAWK DataTable has, hence the components could be used more flexibly anywhere where it's necessary to output the results of selection from some collection.

The next example shows collection output as a plain HTML list

```
<ul>
      <a4j:repeat ...>
     <li>...<li/>
      ...
     <li>...<li/>
      </a4j:repeat>
</ul>
```

All other general attributes are defined according to the similar attributes of iterative components (**<h:dataTable>** or **<ui:repeat>**) and are used in the same way.

6.7.5. Relevant resources links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/repeat.jsf?c=repeat] you can see the example of **<a4j:repeat>** usage and sources for the given example.

6.8. < a4j:commandButton >

6.8.1. Description

The **<a4j:commandButton>** component is very similar to the **<h:commandButton>** component, the only difference is that an Ajax form submit is generated on a click and it allows dynamic rerendering after a response comes back. It's not necessary to plug any support into the component, as Ajax support is already built in.

Table 6.15. a4j : commandButton attributes

Attribute Name	Description
accesskey	This attribute assigns an access key to an element. An access key is a single character from the document character set. Note: Authors should consider the input method of the expected reader when specifying an accesskey
action	MethodBinding pointing at the application action to be invoked, if this UIComponent is activated by the

Attribute Name	Description
	user, during the Apply Request Values or Invoke Application phase of the request processing lifecycle, depending on the value of the immediate property
actionExpression	The action method binding expression.
actionListener	MethodBinding pointing at method accepting an ActionEvent with return type void
ajaxSingle	if "true", submits ONLY one field/link, instead of all form controls
alt	Alternate textual description of the element rendered by this component.
binding	The attribute takes a value-binding expression for a component property of a backing bean
bypassUpdates	If "true", after process validations phase it skips updates of model beans on a force render response. It can be used for validating components input
data	Serialized (on default with JSON) data passed on the client by a developer on AJAX request. It's accessible via "data.foo" syntax
dir	Direction indication for text that does not inherit directionality. Valid values are "LTR" (left-to-right) and "RTL" (right-to-left)
disabled	When set for a form control, this boolean attribute disables the control for user input
eventsQueue	Name of requests queue to avoid send next request before complete other from same event. Can be used to reduce number of requests of frequently events (key press, mouse move etc.)
focus	id of element to set focus after request completed on client side
id	Every component may have a unique id that is automatically created if omitted
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response isn't actual now.

Attribute Name	Description
image	Absolute or relative URL of the image to be displayed for this button. If specified, this "input" element will be of type "image". Otherwise, it will be of the type specified by the "type" property with a label specified by the "value" property.
immediate	True means, that the default ActionListener should be executed immediately (i.e. during Apply Request Values phase of the request processing lifecycle), rather than waiting until the Invoke Application phase
lang	Code describing the language used in the generated markup for this component
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. If "false" (default) updates all rendered by ajax region components
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
onblur	HTML: script expression; the element lost the focus
onchange	HTML: script expression; the element value was changed
onclick	HTML: a script expression; a pointer button is clicked
oncomplete	JavaScript code for call after request completed on client side
ondblclick	HTML: a script expression; a pointer button is double-clicked
onfocus	HTML: script expression; the element got the focus
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto

Attribute Name	Description
onmouseup	HTML: script expression; a pointer button is released
rendered	If "false", this component is not rendered
requestDelay	Attribute defines the time (in ms.) that the request will be wait in the queue before it is ready to send. When the delay time is over, the request will be sent to the server or removed if the newest 'similar' request is in a queue already
reRender	Id['s] (in format of call UIComponent.findComponent()) of components, rendered in case of AjaxRequest caused by this component. Can be single id, comma-separated list of Id's, or EL Expression with array or Collection
size	This attribute tells the user agent the initial width of the control. The width is given in pixels except when type attribute has the value "text" or "password". In that case, its value refers to the (integer) number of characters
status	ID (in format of call UIComponent.findComponent()) of Request status component
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
tabindex	This attribute specifies the position of the current element in the tabbing order for the current document. This value must be a number between 0 and 32767. User agents should ignore leading zeros
timeout	Timeout (in ms) for request.
title	Advisory title information about markup elements generated for this component
type	submit|reset|image|button This attribute specifies a type of control to create. The default value for this attribute is "submit"
value	The current value for this component

Table 6.16. Component identification parameters

Name	Value
component-type	org.ajax4jsf.CommandButton
component-family	javax.faces.Command
component-class	org.ajax4jsf.component.html.HtmlAjaxCommandButton
renderer-type	org.ajax4jsf.components.AjaxCommandButtonRenderer

6.8.2. Creating on a page

<a4j:commandButton> is used in the same way as **<h:commandButton>** , but with definition of the area that is updated after the response comes back from the server.

```
<a4j:commandButton reRender="someData" action="#{bean.action1}" value="Link"/>
```

This definition of the component provides a link, a click on the link causes an Ajax form submit on the server, "action1" method performance, and rendering of the component with *"someData"* id after the response comes back from the server.

6.8.3. Dynamical creation of a component from Java code

Example:

```
import org.ajax4jsf.component.html.HtmlAjaxCommandButton;
...
HtmlAjaxCommandButton myButton = new HtmlAjaxCommandButton();
...
```

6.8.4. Key attributes and ways of usage

The component **<a4j:commandButton>** placed on a page generates the following HTML code:

```
<input type="submit" onclick="A4J.AJAX.Submit(...request parameters);return false;"
 value="sort"/>
```

Hence, the utility method "A4J.AJAX.Submit" is called on a click, the method performs Ajax request as the **<a4j:support>** component

Note:

AJAX support is built in and it's not necessary to add nested **<a4j:support>** to the component.

The usage of the keyword 'this' in JavaScript code in the *"oncomplete"* attribute depends on the location of **<a4j:commandButton>** . If the commandButton is situated outside the re-rendered region you can use keyword 'this' as in the following example:

```
...
<h:form id="form">
```

```
  <a4j:commandButton id="cbutton" action="director.rollCamera"
           onclick="this.disabled=true"
           oncomplete="this.disabled=false" />
</h:form>
...
```

Otherwise if the commandButton contained in re-rendered region the *"oncomplete"* attribute has a problem obtaining a reference of the commandButton object when using the keyword 'this'. In this case you can use the *"oncomplete"* attribute as in the following example:

```
...
<h:form id="form">
<a4j:commandButton id="cbutton" action="director.rollCamera"
         onclick="this.disabled=true"
         oncomplete="document.getElementById('form:cbutton').disabled=false" />
</h:form>
...
```

Common JSF navigation could be performed after an Ajax submit and partial rendering, but Navigation Case must be defined as **<redirect/>** in order to avoid problems with some browsers.

As any Core Ajax component sending Ajax requests and processing server responses **<a4j:commandButton>** has all attributes described above (see **<a4j:support>** chapter) that provide the required behavior of requests sending (delay, limitation of submit area and rendering, and etc.)

6.8.5. Relevant resources links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/commandButton.jsf?c=commandButton]you can see the example of **<a4j:commandButton>** usage and sources for the given example.

6.9. < a4j:actionparam >

The **<a4j:actionparam>** component combines the functionality of both JSF components: **<f:param>** and **<f:actionListener>** .

More information about **<f:param>** and **<f:actionListener>** can be found here [http://java.sun.com/javaee/javaserverfaces/1.2/docs/tlddocs/index.html].

Table 6.17. a4j : actionparam attributes

Attribute Name	Description
assignTo	EL expression for updatable bean property. This property will be updated if the parent command component performs an actionEvent.
binding	The attribute takes a value-binding expression for a component property of a backing bean
converter	ID of a converter to be used or a reference to a converter.

Attribute Name	Description
id	Every component may have a unique id that is automatically created if omitted
name	A name of this parameter
noEscape	If set to true, the value will not enclosed within single quotes and there will be no escaping of characters. This allows the use of the value as JavaScript code for calculating value on the client-side. This doesn't work with non-AJAX components.
value	An initial value or a value binding

Table 6.18. Component identification parameters

Name	Value
component-type	org.ajax4jsf.ActionParameter
component-class	org.ajax4jsf.component.html.HtmlActionParameter

6.9.1. Creating on a page

Simple component definition example:

Example:

```
<a4j:actionParam noEscape="true" name="param1" value="getMyValue()"
 assignTo="#{bean.prop1}" />
```

6.9.2. Dynamical creation of a component from Java code

Example:

```
import org.ajax4jsf.component.html.HtmlActionParameter;
...
HtmlActionParameter myActionParameter = new HtmlActionParameter();
...
```

6.9.3. Key attributes and ways of usage

The component **<a4j:actionparam>** is a combination of the functionality of two JSF tags: **<f:param>** and **<f:actionListener>** .

At the render phase, it's decoded by parent component (**<h:commandLink>** or like) as usual. At the process request phase, if the parent component performs an action event, update the value specified in the "assignTo" attribute as its value. If a converter attribute is specified, use it to encode and decode the value to a string stored in the html parameter.

<a4j:actionparam> has a *"noEscape"* attribute. If it is set to "true", the value will be evaluated as a JavaScript code.
Example:

```
...
        <script>
            ...
             var foo = "bar";
            ...
        </script>
        ...
        <a4j:actionParam noEscape="true" name="param1" value="foo"
 assignTo="#{bean.prop1}" />
...
```

The **<a4j:param>** extends **<f:param>** , so the "name" attribute is mandatory. Otherwise, the value will be missing due missing the request parameter name for it.

6.9.4. Relevant resources links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/actionparam.jsf?c=actionparam] you can see the example of **<a4j:actionparam>** usage and sources for the given example.

More information can be found on the Ajax4jsf Users Forum [http://www.jboss.com/index.html?module=bb&op=viewtopic&p=4063764].

6.10. < a4j:loadScript >

6.10.1. Description

Inserts script links to the head element. Render the value of the component as the value of the *"src"* attribute, after passing it to the getResourceURL() method of the ViewHandler for this application, and passing the result through the encodeResourceURL() method of the ExternalContext.

Table 6.19. a4j : loadScript attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
id	Every component may have a unique id that is automatically created if omitted
rendered	If "false", this component is not rendered
src	name of JavaScript resource to load.

Table 6.20. Component identification parameters

Name	Value
component-type	org.ajax4jsf.LoadScript

Name	Value
component-family	org.ajax4jsf.LoadScript
component-class	org.ajax4jsf.component.html.HtmlLoadScript
renderer-type	org.ajax4jsf.LoadScriptRenderer

6.10.2. Creating on a page

Simple Component definition on a page:

Example:

```
<a4j:loadScript src="scripts/someScript.js"/>
```

6.10.3. Dynamical creation of a component from Java code

Example:

```
import org.ajax4jsf.component.html.HtmlLoadScript;
...
HtmlLoadScript myScript = new HtmlLoadScript();
...
```

6.10.4. Key attributes and ways of usage

As it was mentioned above this component returns its value passing it to the getResourceUR() method of the ViewHandler for this application, and passing the result through the encodeResourceURL() method of the ExternalContext.

It means that the Context will be inserts automatically to the link. And calls like resource:// will be properly handled.

Except this - you may be free to put your script links right from the child page while using facelets templates .

6.10.5. Relevant resources links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/script.jsf?c=loadScript] you can see the example of **<a4j:loadScript>s** usage and sources for the given example.

6.11. < a4j:outputPanel >

6.11.1. Description

The component is used for components grouping in the Ajax output area, which offers several additional output opportunities such as inserting of non-present in tree components, saving of transient elements after Ajax request and some others.

Table 6.21. a4j : outputPanel attributes

Attribute Name	Description
ajaxRendered	Defines, whether the content of this component must be (or not) included in AJAX response created by parent AJAX Container, even if it is not forced by reRender list of ajax action. Ignored if component marked to output by Ajax action. default false
binding	The attribute takes a value-binding expression for a component property of a backing bean
dir	Direction indication for text that does not inherit directionality. Valid values are "LTR" (left-to-right) and "RTL" (right-to-left)
id	Every component may have a unique id that is automatically created if omitted
keepTransient	Flag for mark all child components to non-transient. If true, all children components will be set to non-transient state and keep in saved components tree. For output in self-renderer region all content (By default, all content in <f:verbatim> tags and non-jsf elements in facelets, marked as transient - since, self-rendered ajax regions don't plain output for ajax processing).
lang	Code describing the language used in the generated markup for this component
layout	HTML layout for generated markup. Possible values: "block" for generating an HTML element, "inline" for generating an HTML element, and "none" for generating no HTML element. There is a minor exception for the "none" case where a child element has the property "rendered" set to "false". In this case, we create an empty element with same ID as the child element to use as a placeholder for later processing.
onclick	HTML: a script expression; a pointer button is clicked
ondblclick	HTML: a script expression; a pointer button is double-clicked
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released

Attribute Name	Description
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
rendered	If "false", this component is not rendered
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
title	Advisory title information about markup elements generated for this component

Table 6.22. Component identification parameters

Name	Value
component-type	org.ajax4jsf.OutputPanel
component-family	javax.faces.Panel
component-type	org.ajax4jsf.ajax.OutputPanel
component-class	org.ajax4jsf.component.html.HtmlAjaxOutputPanel
renderer-type	org.ajax4jsf.components.AjaxOutputPanelRenderer

6.11.2. Creating on a page

Here is the simplest way for a component creation on a page.

Example:

```
<a4j:outputPanel>
<!-...Some Content Inside-->
</a4j:outputPanel>
```

6.11.3. Dynamical creation of a component from Java code

Example:

```
import org.ajax4jsf.component.html.HtmlAjaxOutputPanel;
...
```

```
HtmlAjaxOutputPanel  myPanel = new HtmlAjaxOutputPanel();
```

6.11.4. Key attributes and ways of usage

<a4j:outPanel> allows marking of a page area, which is updated on Ajax response. Anyway, **<a4j:outputPanel>** usage is optional, as in RichFaces it's possible to indicate any existing component id on a component view in order to define updating areas. To speed up the performance, RichFaces updates only a component tree. **<a4j:outputPanel>** usage is recommended for wrapping components that aren't rendered during the primary non-ajax response, as the components don't present in a component tree.

Example:

```
<a4j:support ... reRender="mypanel"/>
...
<a4j:outputPanel id="mypanel">
  <h:panelGrid rendered="#{not empty foo.bar}">
 ...
  </h:panelGrid>
</a4j:outputPanel>
```

In addition to the areas directly indicated in *"reRender"* attribute of Ajax components, **<a4j:outputPanel>** allows to update a part of a page basing on its own flag. The flag is defined by the *"ajaxRendered"* attribute. The flag is commonly used when a part of a page must be updated or can be updated on any response.

Example:

```
<a4j:outputPanel ajaxRendered="true">
  <h:messages/>
</a4j:outputPanel>
```

On default **<a4j:outputPanel>** is output as a pair of opening and closing html **** tag, but with the help of the layout attribute this output way could be changed. There are three variants for this component value:

- inline (default)
- block
- none

If layout="block" is chosen, the component is rendered as a pair of opening and closing ** ** tag, to which it's possible to apply any available style attributes available for block tags.

Layout="none" helps to avoid an unnecessary tag round a context that could or couldn't be rendered according to the defined *"rendered"* attribute conditions. If an inner context isn’t rendered, **<a4j:outputPanel>** is rendered as a **** tag with the id equal to an id of a child component and "display:none" style. If a child component is rendered, **<a4j:outputPanel>** doesn't present at all in a final code.

Example:

```
<a4j:support .... reRender="mypanel"/>
...
<a4j:outputPanel layout="none">
  <h:panelGrid id="mypanel" rendered="#{not empty foo.bar}">
 ...
  </h:panelGrid>
</a4j:outputPanel>
```

As you see, the code is very similar to the one shown above, but *"reRender "* attribute refers directly to the updating panelGrid and not to the framing outputPanel, and it's more semantically correct.

<a4j:outPanel> should be used for non-JSF component part framing, which is to be updated on Ajax response, as RichFaces specifies the list of updating areas as a list of an existing JSF component.

On default non-JSF context isn't saved in a component tree, but is rendered anew every time. To accelerate the processing speed and Ajax response input speed, RichFaces saves non-JSF context in a component tree on default. This option could be canceled by *"keepTransient"* attribute that cancels transient flag forced setting for child components. This flag setting keeps the current value set by child components.

Note: In JSF 1.1 implementation and lower, where non-JSF context should be framed with the "f:verbatim" attribute, **<a4j:outputPanel>** doesn't improve this JSF implementation option in any way, so you still have to use this tag where it's necessary without RichFaces usage.

RichFaces allows setting Ajax responses rendering directly basing on component tree nodes without referring to the JSP (XHTML) page code. It could be defined by selfRendered attribute setting to *"true"* on **<a4j:region>** and could help considerably speed up a response output. However, if a transient flag is kept as it is, this rapid processing could cause missing of transient components that present on view and don’t come into a component tree. Hence, for any particular case you could choose a way for you application optimization: speed up processing or redundant memory for keeping tree part earlier defined a transient.

6.11.5. Relevant resources links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/outputPanel.jsf?c=outputPanel] you can see the example of **<a4j:outputPanel>** usage and sources for the given example.

Some additional information about usage of component can be found here [http://www.jboss.com/index.html?module=bb&op=viewtopic&p=4052203#4052203].

6.12. < a4j:loadBundle >

The **<a4j:loadBundle>** component is similar to the same component from the JSF Core library. The component loads a resource bundle localized for the Locale of the current view and exposes it (as a Map) in the request attributes of the current request.

Table 6.23. a4j : loadBundle attributes

Attribute Name	Description
basename	Base name of the resource bundle to be loaded.

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
id	Every component may have a unique id that is automatically created if omitted
rendered	If "false", this component is not rendered
var	Name of a request scope attribute under which the resource bundle will be exposed as a Map.

Table 6.24. Component identification parameters

Name	Value
component-type	org.ajax4jsf.Bundle
component-family	org.ajax4jsf.Bundle
component-class	org.ajax4jsf.component.html.AjaxLoadBundle

6.12.1. Creating on a page

Simple component definition on a page:

Example:

```
<a4j:loadBundle baseName="demo.bundle.Messages" var="Message"/>
```

6.12.2. Dynamical creation of a component from Java code

Example:

```
import org.ajax4jsf.component.html.AjaxLoadBundle;
...
AjaxLoadBundle myBundle = new AjaxLoadBundle();
...
```

6.12.3. Key attributes and ways of usage

<a4j:loadBundle> allows to use reference to bundle messages during the Ajax re-rendering. **<a4j:loadBundle>** is a substitute for the **<f:loadBundle>** in JSF 1.1 which is not a JSF component originally. **<f:loadBundle>** is a jsp tag that load the bundle messages into the request scope when page is rendered. As soon as each Ajax request works in own request scope, the bundles loaded with **<f:loadBundle>** are unavailable. Instead of **<f:loadBundle>** that might be located anywhere on a page, the **<a4j:loadBundle>** should be declared inside the **<f:view>** (this does not matter in case on using Facelets) JSF 1.2 introduces the bundle registered in the faces-config.xml. This fixed the problem with **<f:loadBundle>** . Therefore, you can use this JSF 1.2 way to declare your bundles.

6.12.4. Relevant resources links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/bundle.jsf?c=loadBundle] you can see the example of **<a4j:loadBundle>** usage and sources for the given example.

6.13. < a4j:mediaOutput >

6.13.1. Description

The **<a4j:mediaOutput>** component implements one of the basic features specified in the framework. The component is a facility for generating images, video, sounds and other binary resources defined by you on-the-fly.

Table 6.25. a4j : mediaOutput attributes

Attribute Name	Description
accesskey	This attribute assigns an access key to an element. An access key is a single character from the document character set. Note: Authors should consider the input method of the expected reader when specifying an accesskey
align	bottom|middle|top|left|right Deprecated. This attribute specifies the position of an IMG, OBJECT, or APPLET with respect to its context. The following values for align concern the object's position with respect to surrounding text: * bottom: means that the bottom of the object should be vertically aligned with the current baseline. This is the default value. * middle: means that the center of the object should be vertically aligned with the current baseline. * top: means that the top of the object should be vertically aligned with the top of the current text line
archive	space-separated list of URIs
binding	The attribute takes a value-binding expression for a component property of a backing bean
border	Deprecated. This attribute specifies the width of an IMG or OBJECT border, in pixels. The default value for this attribute depends on the user agent
cacheable	If "true", the resource is cached (on the server and the client sides).
charset	The character encoding of a resource designated by this hyperlink

Attribute Name	Description
classid	identifies an implementation
codebase	base URI for classid, data, archive
codetype	content type for code
converter	ID of a converter to be used or a reference to a converter.
coords	This attribute specifies the position and shape on the screen. The number and order of values depends on the shape being defined. Possible combinations: * rect: left-x, top-y, right-x, bottom-y. * circle: center-x, center-y, radius. Note. When the radius value is percentage value, user agents should calculate the final radius value based on the associated object's width and height. The radius should be the smaller value of the two. * poly: x1, y1, x2, y2, ..., xN, yN. The first x and y coordinate pair and the last should be the same to close the polygon. When these coordinate values are not the same, user agents should infer an additional coordinate pair to close the polygon. Coordinates are relative to the top, left corner of the object. All values are lengths. All values are separated by commas
createContent	Method call expression to send generated resource to OutputStream. It must have two parameter with a type of java.io.OutputStream and java.lang.Object (deserialized value of data attribute)
declare	declare but don't instantiate flag
dir	Direction indication for text that does not inherit directionality. Valid values are "LTR" (left-to-right) and "RTL" (right-to-left)
element	Name of html element for resource link - may be <a> <img> <object> <applet> <script> or <link>
expires	The attribute allows to manage caching and defines the period after which a resource is reloaded.
hreflang	Base language of a resource specified with the href attribute; hreflang may only be used with href
hspace	Deprecated. This attribute specifies the amount of white space to be inserted to the left and right of an IMG, APPLET, or OBJECT. The default value is not specified, but is generally a small, non-zero length

Attribute Name	Description
id	Every component may have a unique id that is automatically created if omitted
ismap	use server-side image map
lang	Code describing the language used in the generated markup for this component
lastModified	The attribute allows to manage caching. A browser can send request with the header "If-Modified-Since" for necessity of object reloading. If time of modification is earlier, then the framework doesn't call generation and return code 304.
mimeType	Geterated content mime-type for append to response header ('image/jpeg' etc)
onblur	JavaScript code. The onblur event occurs when an element loses focus either by the pointing device or by tabbing navigation. It may be used with the same elements as onfocus
onclick	HTML: a script expression; a pointer button is clicked
ondblclick	HTML: a script expression; a pointer button is double-clicked
onfocus	JavaScript code. The onfocus event occurs when an element gets focus
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
rel	The relationship from the current document to the anchor specified by this hyperlink. The value of this attribute is a space-separated list of link types

Attribute Name	Description
rendered	If "false", this component is not rendered
rev	A reverse link from the anchor specified by this hyperlink to the current document. The value of this attribute is a space-separated list of link types
session	If "true", a session for an object generation is restored.
shape	default|rect|circle|poly [CI] This attribute specifies the shape of a region. Possible values: * default: Specifies the entire region. * rect: Define a rectangular region. * circle: Define a circular region. * poly: Define a polygonal region.
standby	message to show while loading
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
tabindex	This attribute specifies the position of the current element in the tabbing order for the current document. This value must be a number between 0 and 32767. User agents should ignore leading zeros
target	This attribute specifies the name of a frame where a document is to be opened. By assigning a name to a frame via the name attribute, authors can refer to it as the "target" of links defined by other elements
title	Advisory title information about markup elements generated for this component
type	The content type of the resource designated by this hyperlink
uriAttribute	Name of attribute for resource-link attribute ('href' for <a>, 'src' for <img> or <script>, etc
usemap	use client-side image map
value	Data value calculated at render time and stored in URI (also as part of cache Key), at generation time passed to send method. Can be used for update cache at change of generating conditions, and for creating beans as "Lightweight" pattern components (request scope). IMPORTANT: Since serialized data stored in URI, avoid using big objects.

Attribute Name	Description
vspace	Deprecated. This attribute specifies the amount of white space to be inserted above and below an IMG, APPLET, or OBJECT. The default value is not specified, but is generally a small, non-zero length

Table 6.26. Component identification parameters

Name	Value
component-type	org.ajax4jsf.MediaOutput
component-family	org.ajax4jsf.Resource
component-class	org.ajax4jsf.component.html.MediaOutput
renderer-type	org.ajax4jsf.MediaOutputRenderer

6.13.2. Creating on a page

To use the component it's necessary to define it on a page and set Java methods for data keeping and data transmission to output stream.

Component definition on a page for graphical data output

Example:

```
...
<a4j:mediaOutput element="img" cacheable="false" session="true"
    createContent="#{paintBean.paint}" value="#{paintData}"
    mimeType="image/jpeg"/>
...
```

Here is the content of paintData that is a bean containing output data

Example:

```
package demo;

public class PaintData implements Serializable{
        private static final long serialVersionUID = 1L;
        Integer width=100;
        Integer weight=50;
...
```

The Paint method of the paintBean class is a method transmitting graphical data into output stream.

Example:

```
public void paint(OutputStream out, Object data) throws IOException{
 <!-...Some code that puts binary data to "out" Stream-->
        }
```

6.13.3. Dynamical creation of a component from Java code

Example:

```
import org.ajax4jsf.component.html.MediaOutput;
...
MediaOutput myMedia = new MediaOutput ();
...
```

6.13.4. Key attributes and ways of usage

As it was shown in the example above there are two main components:

- *"createContent"* specifies a method accepting 2 parameters. The first (of java.io.OutputStream type) defines a stream, where any binary data is output. The second (of java.lang.Object type) contains deserialized object with data specified in the *"value"* attribute.
- Value specifies a bean class keeping data for transmitting into a method that transmits it into a stream.

> **Note:**
> A bean class transmitted into value should implement Serializable interface.

Hence, when using the component it's possible to output your data of any type on a page with Ajax requests.

6.13.5. Relevant resources links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/mediaOutput.jsf?c=mediaOutput] you can see the example of **<a4j:mediaOutput >** usage and sources for the given example.

6.14. < a4j:log >

6.14.1. Description

The **<a4j:log >** component generates JavaScript for opening of the window with client-side debug information on an Ajax request.

Table 6.27. a4j : log attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
height	height of pop-up
hotkey	Keyboard key for activate (in combination with CTRL+SHIFT) log window.
id	Every component may have a unique id that is automatically created if omitted

Attribute Name	Description
level	log level, possible values : FATAL,ERROR,WARN,INFO,DEBUG,ALL. Component set level 'ALL' by default.
name	name of pop-up window
popup	Render log as popup-window or as div element in page
rendered	If "false", this component is not rendered
width	width of pop-up.

Table 6.28. Component identification parameters

Name	Value
component-type	org.ajax4jsf.Log
component-family	org.ajax4jsf.Log
component-class	org.ajax4jsf.component.html.AjaxLog
renderer-type	org.ajax4jsf.LogRenderer

6.14.3. Creating on a page

To use the component, it's necessary to place the following string on a page:

```
<a4j:log/>
```

Then, in order to open a log window, press "CTRL+SHIFT+L" on a page with the component.

6.14.4. Dynamical creation of a component from Java code

Example:

```
import org.ajax4jsf.component.html.AjaxLog;
...
AjaxLog myLog = new AjaxLog();
...
```

6.14.5. Key attributes and ways of usage

Usage of the appropriate component attributes could change a representation level of debug information as well as the hot key for a window opening.

The hot key could be changed with the *"hotkey"* attribute, where it's necessary to define one letter that together with "CTRL+SHIFT" opens a window.

The *"level"* attribute with several possible values (FATAL, ERROR, WARN, INFO, ALL) could change a logging level.

The log could be generated not only in a new window, but also on the current page in a separate ** ** , this is also controlled with the *"popup"* attribute on the component.

Example:

```
<a4j:log level="ALL" popup="false" width="400" height="200"/>
```

The component defined this way is decoded on a page as ** ** inside a page, where all the information beginning with informational message is generated.

Note:

<a4j:log> is getting renewed automatically after execution of Ajax requests. Don't renew **<a4j:log>** by using reRender!

6.14.6. Relevant resources links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/log.jsf?c=log] you can see the example of **<a4j:log>** usage and sources for the given example.

6.15. < a4j:region >

6.15.1. Description

The **<a4j:region>** component defines an area that is decoded on the server after Ajax submission.

Table 6.29. a4j : region attributes

Attribute Name	Description
ajaxListener	MethodBinding representing an action listener method that will be notified when this component is activated by the ajax Request and handle it. The expression must evaluate to a public method that takes an AjaxEvent parameter, with a return type of void
binding	The attribute takes a value-binding expression for a component property of a backing bean
id	Every component may have a unique id that is automatically created if omitted
immediate	Flag indicating that, if this component is activated by ajaxrequest, notifications should be delivered to interested listeners and actions immediately (that is, during Apply Request Values phase) rather than waiting until Invoke Application phase
rendered	If "false", this component is not rendered

Attribute Name	Description
renderRegionOnly	Flag to disable rendering in AJAX responses content outside of active region. If this attribute set to "true" , no one of the components outside of region will be included to AJAX response. If set to "false", search for components to include in response will be performed on all tree. Default "false"
selfRendered	if "true", self-render subtree at InvokeApplication (or Decode, if immediate property set to true) phase

Table 6.30. Component identification parameters

Name	Value
component-type	org.ajax4jsf.AjaxRegion
component-family	org.ajax4jsf.AjaxRegion
component-class	org.ajax4jsf.component.html.HtmlAjaxRegion
renderer-type	org.ajax4jsf.components.AjaxRegionRenderer

6.15.2. Creating on a page

Here is an example of the region decoding on a page.

```
<a4j:region>
 <!--..Some content that will be decoded on server after Ajax request.-->
</a4j:region>
```

6.15.3. Dynamical creation of a component from Java code

Example:

```
import org.ajax4jsf.component.html.HtmlAjaxRegion;
...
HtmlAjaxRegion newRegion = new HtmlAjaxRegion();
...
```

6.15.4. Key attributes and ways of usage

The region is a component used for manipulation with components sent to the server. It sets particular processing parameters for an area on the server, i.e. the region deals with data input on the server and has no direct impact on output. To read more on the components responsible for out, see *"reference"*

The region marks an area page that is decoded on the server. In most cases it is not necessary to use the region, as ViewRoot is a default region. This component helps to reduce data quantity processed by the server, but the region doesn't influence on the standard submission rules. It means that:

- The area that is to be submitted onto the server should be embedded in **<h:form/a4j:form>** component.

- The whole form is submitted on Ajax response and not a region that request is performed from.

Example:

```
<h:form id="form1">
 <a4j:region>
  <a4j:commandLink reRender="someID" value="Link" id="link1"/>
  <!--..Some content that will be decoded on server after Ajax request.-->
 </a4j:region>
<h:form>
```

Hence, the **<a4j:commandLink>** request generation causes full "form1" form submission onto the server, the only difference is that a component tree part decoded on the serve is the part included into the region.

The regions could be nested in any order, the server picks out and decodes only the region, which contains a particular component that sends a request.

Example:

```
<a4j:region>
 <a4j:commandLink reRender="someID" value="Link" id="link1"/>
 <a4j:region>
  <a4j:commandLink reRender="someID" value="Link" id="link2"/>
  <!--..Some content that will be decoded on server after Ajax request.-->
 </a4j:region >
 <!--..Some content that will be decoded on server after Ajax request.-->
</a4j:region >
```

Therefore, the external region is decoded for the "link1" and the internal one is decoded for the "link2".

RichFaces allows setting Ajax responses rendering directly basing on component tree nodes without referring to the JSP (XHTML) page code. It could be defined by *"selfRendered"* attribute setting to *"true"* on **<a4j:region>** and could help considerably speed up a response output. However, this rapid processing could cause missing of transient components that present on view and don't come into a component tree as well as omitting of **<a4j:outputPanel>** usage described below.

Example:

```
<a4j:region selfRendered ="true">
 <a4j:commandLink reRender="someID" value="Link" id="link1"/>
 <!--..Some content with HTML used ("br" ,"h1" and other tags used)-->
</a4j:region >
```

In this case, the processing is quicker and going on without referring to a page code, but the HTML code that isn't saved in a component tree could be lost. Thus, this optimization should be very carefully performed and a usage of the additional components RichFaces (**<a4j:outputPanel>**) is required.

The processing could be also accelerated if a region decoded for the processing passes straight away into Encode. But to update some data out of the region or on another region, use the *"renderRegionOnly"* attribute set to *"false"* ("true on default") to change this behaviour.

Example:

```
<a4j:region renderRegionOnly="true">
 <a4j:commandLink reRender="someID2" value="Link1" id="link1"/>
 <h:panelGroup id="someId1">
 </h:panelGroup>
</a4j:region>
<a4j:region renderRegionOnly="false">
 <a4j:commandLink reRender="someID1" value="Link2" id="link2"/>
 <h:panelGroup  id="someId1">
 </h:panelGroup>
</a4j:region>
```

This example shows that one of the regions is decoded when a link is used inside. Nevertheless, if after processing the "link1" is clicked, the first region passes into Encode as a root region and encode performance time is reduced. This optimization doesn't allow data update out of the region and should be implemented very carefully. The data out of the region described with *"renderRegionOnly"* ="false" is updated successfully.

6.15.5. Relevant resources links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/region.jsf?c=region] you can see the example of **<a4j:region>** usage and sources for the given example.

6.16. < a4j:form >

6.16.1. Description

The **<a4j:form>** component is very similar to the same component from the JSF HTML library, the only slight difference is in generation of links inside and possibility of Ajax by-default submission.

Table 6.31. a4j : form attributes

Attribute Name	Description
accept	This attribute specifies a comma-separated list of content types that a server processing this form will handle correctly. User agents may use this information to filter out non-conforming files when prompting a user to select files to be sent to the server (cf. the INPUT element when type="file")
acceptCharset	This attribute specifies the list of character encodings for input data that is accepted by the server processing this form. The value is a space- and/or comma-delimited list of charset values. The client must interpret this list as an exclusive-or list, i.e., the server is able to accept any single character encoding per entity received. The default value for this attribute is the reserved string "UNKNOWN". User agents may interpret this value as the character encoding that was

Attribute Name	Description
	used to transmit the document containing this FORM element
ajaxSingle	if "true", submits ONLY one field/link, instead of all form controls
ajaxSubmit	If true, it becomes possible to set AJAX submission way for any components inside .
binding	The attribute takes a value-binding expression for a component property of a backing bean
bypassUpdates	If "true", after process validations phase it skips updates of model beans on a force render response. It can be used for validating components input
data	Serialized (on default with JSON) data passed on the client by a developer on AJAX request. It's accessible via "data.foo" syntax
enctype	This attribute specifies the content type used to submit the form to the server (when the value of method is "post"). The default value for this attribute is "application/x-www-form-urlencoded". The value "multipart/form-data" should be used in combination with the INPUT element, type="file"
eventsQueue	Name of requests queue to avoid send next request before complete other from same event. Can be used to reduce number of requests of frequently events (key press, mouse move etc.)
focus	id of element to set focus after request completed on client side
id	Every component may have a unique id that is automatically created if omitted
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response isn't actual now
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. If "false" (default) updates all rendered by ajax region components

Attribute Name	Description
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
oncomplete	JavaScript code for call after request completed on client side
onreset	The onreset event occurs when a form is reset. It only applies to the FORM element
onsubmit	The onsubmit event occurs when a form is submitted. It only applies to the FORM element
prependId	The flag indicating whether or not this form should prepend its id to its descendent id during the clientId generation process. If this flag is not set, the default value is true.
rendered	If "false", this component is not rendered
requestDelay	Attribute defines the time (in ms.) that the request will be wait in the queue before it is ready to send. When the delay time is over, the request will be sent to the server or removed if the newest 'similar' request is in a queue already
reRender	Id['s] (in format of call UIComponent.findComponent()) of components, rendered in case of AjaxRequest caused by this component. Can be single id, comma-separated list of Id's, or EL Expression with array or Collection
status	ID (in format of call UIComponent.findComponent()) of Request status component
target	This attribute specifies the name of a frame where a document is to be opened. By assigning a name to a frame via the name attribute, authors can refer to it as the "target" of links defined by other elements
timeout	Timeout (in ms) for request.

Table 6.32. Component identification parameters

Name	Value
component-type	org.ajax4jsf.Form
component-family	javax.faces.Form
component-class	org.ajax4jsf.component.html.AjaxForm

Name	Value
renderer-type	org.ajax4jsf.FormRenderer

6.16.2. Creating on a page

Component definition on a page is similar to definition of the original component from JSF HTML library.

```
<a4j:form>
 <!--...Some content to be submitted.-->
</a4j:form>
```

6.16.3. Dynamical creation of a component from Java code

Example:

```
import org.ajax4jsf.component.html.AjaxForm;
...
AjaxForm myForm = new AjaxForm();
...
```

6.16.4. Key attributes and ways of usage

The difference with the original component is that all hidden fields required for command links are always rendered and it doesn't depend on links rendering on the initial page. It solves the problem with invalid links that weren't rendered on a page immediately, but after some Ajax request.

Beginning with release 1.0.5 additional attributes that make this form variant universal have appeared. With a new attribute definition as ajax= *"true"* , it becomes possible to set Ajax submission way for any components inside, i.e. not a page URL is used as an *"action"* attribute, but the javascript:A4J.AJAX.Submit(...) call. In this case, rendering is defined as "reRender"=list of Ids for the form element itself.

Example

```
<a4j:form id="helloForm" ajaxSubmit="true" reRender="table">
 ...
 <t:dataTable id="table"... >
  ...
 </t:dataTable>
 ...
 <t:dataScroller for="table"... >
  ...
 </t:dataScroller>
 ...
</a4j:form
```

This example shows that in order to make **<t:dataScroller>** submissions to be Ajax ones it's required only to place this **<t:dataScroller>** into **<a4j:form>** . In the other case it is necessary to redefine renders for its child links elements that are defined as **<h:commandLink>** and can't be made Ajax ones with using e.g. **<a4j:support>** .

6.16.5. Relevant resources links

Here. [http://livedemo.exadel.com/richfaces-demo/richfaces/form.jsf?c=form] you can see the example of **<a4j:form>** usage and sources for the given example.

6.17. < a4j:htmlCommandLink >

6.17.1. Description

The **<a4j:htmlCommandLink>** component is very similar to the same component from the JSF HTML library, the only slight difference is in links generation and problem solving that occurs when an original component is used.

Table 6.33. a4j : htmlCommandLink attributes

Attribute Name	Description
accesskey	This attribute assigns an access key to an element. An access key is a single character from the document character set. Note: Authors should consider the input method of the expected reader when specifying an accesskey
action	MethodBinding pointing at the application action to be invoked, if this UIComponent is activated by the user, during the Apply Request Values or Invoke Application phase of the request processing lifecycle, depending on the value of the immediate property
actionExpression	The action method binding expression.
actionListener	MethodBinding pointing at method accepting an ActionEvent with return type void
binding	The attribute takes a value-binding expression for a component property of a backing bean
charset	The character encoding of a resource designated by this hyperlink
coords	This attribute specifies the position and shape on the screen. The number and order of values depends on the shape being defined. Possible combinations: * rect: left-x, top-y, right-x, bottom-y. * circle: center-x, center-y, radius. Note. When the radius value is percentage value, user agents should calculate the final radius value based on the associated object's width and height. The radius should be the smaller value of the two. * poly: x1, y1, x2, y2, ..., xN, yN. The first x and y coordinate pair and the last should be the same to close

Attribute Name	Description
	the polygon. When these coordinate values are not the same, user agents should infer an additional coordinate pair to close the polygon. Coordinates are relative to the top, left corner of the object. All values are lengths. All values are separated by commas
dir	Direction indication for text that does not inherit directionality. Valid values are "LTR" (left-to-right) and "RTL" (right-to-left)
disabled	When set for a form control, this boolean attribute disables the control for user input.
hreflang	Base language of a resource specified with the href attribute; hreflang may only be used with href
id	Every component may have a unique id that is automatically created if omitted
immediate	True means, that the default ActionListener should be executed immediately (i.e. during Apply Request Values phase of the request processing lifecycle), rather than waiting until the Invoke Application phase
lang	Code describing the language used in the generated markup for this component
onblur	JavaScript code. The onblur event occurs when an element loses focus either by the pointing device or by tabbing navigation. It may be used with the same elements as onfocus
onclick	HTML: a script expression; a pointer button is clicked
ondblclick	HTML: a script expression; a pointer button is double-clicked
onfocus	JavaScript code. The onfocus event occurs when an element gets focus
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within

Attribute Name	Description
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
rel	The relationship from the current document to the anchor specified by this hyperlink. The value of this attribute is a space-separated list of link types
rendered	If "false", this component is not rendered
rev	A reverse link from the anchor specified by this hyperlink to the current document. The value of this attribute is a space-separated list of link types
shape	default|rect|circle|poly [CI] This attribute specifies the shape of a region. Possible values: * default: Specifies the entire region. * rect: Define a rectangular region. * circle: Define a circular region. * poly: Define a polygonal region.
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
tabindex	This attribute specifies the position of the current element in the tabbing order for the current document. This value must be a number between 0 and 32767. User agents should ignore leading zeros
target	This attribute specifies the name of a frame where a document is to be opened. By assigning a name to a frame via the name attribute, authors can refer to it as the "target" of links defined by other elements
title	Advisory title information about markup elements generated for this component
type	The content type of the resource designated by this hyperlink
value	The current value for this component

Table 6.34. Component identification parameters

Name	Value
component-type	javax.faces.HtmlCommandLink

Name	Value
component-family	javax.faces.Command
component-class	javax.faces.component.html.HtmlCommandLink
renderer-type	org.ajax4jsf.HtmlCommandLinkRenderer

6.17.2. Creating on a page

Component definition on a page is the same as for the original component from the JSF HTML library.

Example:

```
<a4j:htmlCommandLink value="value" action="action"/>
```

6.17.3. Dynamical creation of a component from Java code

Example:

```
import javax.faces.component.html.HtmlCommandLink;
...
HtmlCommandLink myCommandLink = new HtmlCommandLink();
...
```

6.17.4. Key attributes and ways of usage

The difference with the original component is that all hidden fields required for command links with the child **<f:param>** elements are always rendered and it doesn't depend on links rendering on the initial page. It solves the problem with invalid links that weren't rendered on a page immediately, but after some Ajax request.

Example:

```
<a4j:form>
 ...
 <a4j:htmlComandLink action="action" value="link" rendered="#{bean.rendered}">
  <f:param ...>
 <a4j:htmlComandLink>
 ...
</a4j:form>
```

In this example **<a4j:htmlCommandLink>** works as standard **<h:commandLink>** , but here hidden fields required for correct functionality are rendered before the first downloading of a page, though it doesn't happen if its attribute isn't set to "false".

6.17.5. Relevant resources links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/htmlCommandLink.jsf?c=htmlCommandLink] you can see the example of **<a4j:htmlCommandLinks>** usage and sources for the given example.

6.18. < a4j:commandLink >

6.18.1. Description

The **<a4j:commandLink>** component is very similar to the **<h:commandLink>** component, the only difference is that an Ajax form submit is generated on a click and it allows dynamic rerendering after a response comes back. It's not necessary to plug any support into the component, as Ajax support is already built in.

Table 6.35. a4j : commandLink attributes

Attribute Name	Description
accesskey	This attribute assigns an access key to an element. An access key is a single character from the document character set. Note: Authors should consider the input method of the expected reader when specifying an accesskey
action	MethodBinding pointing at the application action to be invoked, if this UIComponent is activated by the user, during the Apply Request Values or Invoke Application phase of the request processing lifecycle, depending on the value of the immediate property
actionExpression	The action method binding expression.
actionListener	MethodBinding pointing at method accepting an ActionEvent with return type void
ajaxSingle	if "true", submits ONLY one field/link, instead of all form controls
binding	The attribute takes a value-binding expression for a component property of a backing bean
bypassUpdates	If "true", after process validations phase it skips updates of model beans on a force render response. It can be used for validating components input
charset	The character encoding of a resource designated by this hyperlink
coords	This attribute specifies the position and shape on the screen. The number and order of values depends on the shape being defined. Possible combinations: * rect: left-x, top-y, right-x, bottom-y. * circle: center-x, center-y, radius. Note. When the radius value is percentage value, user agents should calculate the final radius value based on the associated object's width and

Attribute Name	Description
	height. The radius should be the smaller value of the two. * poly: x1, y1, x2, y2, ..., xN, yN. The first x and y coordinate pair and the last should be the same to close the polygon. When these coordinate values are not the same, user agents should infer an additional coordinate pair to close the polygon. Coordinates are relative to the top, left corner of the object. All values are lengths. All values are separated by commas
data	Serialized (on default with JSON) data passed on the client by a developer on AJAX request. It's accessible via "data.foo" syntax
dir	Direction indication for text that does not inherit directionality. Valid values are "LTR" (left-to-right) and "RTL" (right-to-left)
eventsQueue	Name of requests queue to avoid send next request before complete other from same event. Can be used to reduce number of requests of frequently events (key press, mouse move etc.)
focus	id of element to set focus after request completed on client side
hreflang	Base language of a resource specified with the href attribute; hreflang may only be used with href
id	Every component may have a unique id that is automatically created if omitted
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response isn't actual now
immediate	True means, that the default ActionListener should be executed immediately (i.e. during Apply Request Values phase of the request processing lifecycle), rather than waiting until the Invoke Application phase
lang	Code describing the language used in the generated markup for this component
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. If "false" (default) updates all rendered by ajax region components

Attribute Name	Description
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
onblur	JavaScript code. The onblur event occurs when an element loses focus either by the pointing device or by tabbing navigation. It may be used with the same elements as onfocus
onclick	HTML: a script expression; a pointer button is clicked
oncomplete	JavaScript code for call after request completed on client side
ondblclick	HTML: a script expression; a pointer button is double-clicked
onfocus	JavaScript code. The onfocus event occurs when an element gets focus
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
rel	The relationship from the current document to the anchor specified by this hyperlink. The value of this attribute is a space-separated list of link types
rendered	If "false", this component is not rendered
requestDelay	Attribute defines the time (in ms.) that the request will be wait in the queue before it is ready to send. When the delay time is over, the request will be sent to the server or removed if the newest 'similar' request is in a queue already
reRender	Id['s] (in format of call UIComponent.findComponent()) of components,

Attribute Name	Description
	rendered in case of AjaxRequest caused by this component. Can be single id, comma-separated list of Id's, or EL Expression with array or Collection
rev	A reverse link from the anchor specified by this hyperlink to the current document. The value of this attribute is a space-separated list of link types
shape	default|rect|circle|poly [CI] This attribute specifies the shape of a region. Possible values: * default: Specifies the entire region. * rect: Define a rectangular region. * circle: Define a circular region. * poly: Define a polygonal region.
status	ID (in format of call UIComponent.findComponent()) of Request status component
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
tabindex	This attribute specifies the position of the current element in the tabbing order for the current document. This value must be a number between 0 and 32767. User agents should ignore leading zeros
target	This attribute specifies the name of a frame where a document is to be opened. By assigning a name to a frame via the name attribute, authors can refer to it as the "target" of links defined by other elements
timeout	Timeout (in ms) for request.
title	Advisory title information about markup elements generated for this component
type	The content type of the resource designated by this hyperlink
value	The current value for this component

Table 6.36. Component identification parameters

Name	Value
component-type	org.ajax4jsf.CommandLink
component-family	javax.faces.Command
component-class	org.ajax4jsf.component.html.HtmlAjaxCommandLink

Name	Value
renderer-type	org.ajax4jsf.components.AjaxCommandLinkRenderer

6.18.2. Creating on a page

<a4j:commandLink> is used in the same way as **<h:commandLink>** , but with definition of the area that is updated after the response comes back from the server.

```
<a4j:commandLink reRender="someData" action="#{bean.action1}" value="Link"/>
```

This definition of the component provides a link, and a click on the link causes an Ajax form submit on the server, "action1" method performance, and rendering of the component with *"someData"* id after the response comes back from the server.

6.18.3. Dynamical creation of a component from Java code

Example:

```
import org.ajax4jsf.component.html.HtmlAjaxCommandLink;
...
HtmlAjaxCommandLink myLink = new HtmlAjaxCommandLink();
...
```

6.18.4. Key attributes and ways of usage

The component **<a4j:commandLink>** placed on a page generates the following HTML code:

```
<a href="#" onclick="A4J.AJAX.Submit(?"request parameters");
   return
   <a href="#" onclick="A4J.AJAX.Submit(?"request parameters");
   return false;">
   <span style="color: black;">Link Value</span>
   </a>
```

Hence, the utility method "A4J.AJAX.Submit" is called on a click, the method performs Ajax request as the **<a4j:support>** component

Note:

AJAX support is built in and it's not necessary to add nested **<a4j:support>** to the component.

Common JSF navigation could be performed after Ajax submit and partial rendering, but Navigation Case must be defined as **<redirect/>** in order to avoid problems with some browsers.

As any Core Ajax component sending Ajax requests and processing server responses **<a4j:commandLink>** has all attributes described above (see **<a4j:support>** chapter) that provide the required behavior of requests sending (delay, limitation of submit area and rendering, etc.)

6.18.5. Relevant resources links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/commandLink.jsf?c=commandLink] you can see the example of **<a4j:commandLink>** usage and sources for the given example

6.19. < a4j:support >

6.19.1. Description

The **<a4j:support>** component adds an Ajax support to any existing JSF component. It allows a component to generate asynchronous requests on the necessary event demand and with partial update of page content after a response incoming from the server.

Table 6.37. a4j : support attributes

Attribute Name	Description
action	MethodBinding pointing at the application action to be invoked, if this UIComponent is activated by the user, during the Apply Request Values or Invoke Application phase of the request processing lifecycle, depending on the value of the immediate property
actionExpression	The action method binding expression.
actionListener	MethodBinding pointing at method accepting an ActionEvent with return type void
ajaxSingle	if "true", submits ONLY one field/link, instead of all form controls
binding	The attribute takes a value-binding expression for a component property of a backing bean
bypassUpdates	If "true", after process validations phase it skips updates of model beans on a force render response. It can be used for validating components input
data	Serialized (on default with JSON) data passed on the client by a developer on AJAX request. It's accessible via "data.foo" syntax
disableDefault	Disable default action for target event (append "return false;" to javascript)
event	Name of JavaScript event property (onclick, onchange, etc.) of parent component, for which we will build AJAX submission code
eventsQueue	Name of requests queue to avoid send next request before complete other from same event. Can be used

Attribute Name	Description
	to reduce number of requests of frequently events (key press, mouse move etc.)
focus	id of element to set focus after request completed on client side
id	Every component may have a unique id that is automatically created if omitted
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response isn't actual now
immediate	True means, that the default ActionListener should be executed immediately (i.e. during Apply Request Values phase of the request processing lifecycle), rather than waiting until the Invoke Application phase
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. If "false" (default) updates all rendered by ajax region components
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
oncomplete	JavaScript code for call after request completed on client side
onsubmit	JavaScript code for call before submission of ajax event
rendered	If "false", this component is not rendered
requestDelay	Attribute defines the time (in ms.) that the request will be wait in the queue before it is ready to send. When the delay time is over, the request will be sent to the server or removed if the newest 'similar' request is in a queue already
reRender	Id['s] (in format of call UIComponent.findComponent()) of components, rendered in case of AjaxRequest caused by this component. Can be single id, comma-separated list of Id's, or EL Expression with array or Collection
status	ID (in format of call UIComponent.findComponent()) of Request status component

Attribute Name	Description
timeout	Timeout (in ms) for request

Table 6.38. Component identification parameters

Name	Value
component-type	org.ajax4jsf.Support
component-family	org.ajax4jsf.AjaxSupport
component-class	org.ajax4jsf.component.html.HtmlAjaxSupport
renderer-type	org.ajax4jsf.components.AjaxSupportRenderer

6.19.2. Creating on a page

To use a component, place **<a4j:support>** as nested to the component requesting Ajax functionality and specify an event of a parent component that generates Ajax request and the components to be rerendered after a response from the server.

Example:

```
<h:inputText value="#{bean.text}">
 <a4j:support event="onkeyup" reRender="repeater"/>
</h:inputText>
<h:outputText id="repeater" value="#{bean.text}"/>
```

On every keyup event generated by an input field, a form is submitted on the server with the help of Ajax and on a response coming from the server, element with *"repeater"* id, founded in a DOM tree is redrawn according to a new data from the response.

6.19.3. Dynamical creation of a component from Java code

Example:

```
import org.ajax4jsf.component.html.HtmlAjaxSupport;
...
HtmlAjaxSupport mySupport = new HtmlAjaxSupport();>
```

6.19.4. Key attributes and ways of usage

A4j support addition is very similar to correspondent event redefinition of a component, i.e.

Example:

```
<h:inputText value="#{bean.text}">
    <a4j:support event="onkeyup" reRender="repeater"/>
</h:inputText>
```

Is decoded on a page as:

Example:

```
<input  onkeyup="A4J.AJAX.Submit( Some request parameters )"/>
```

As you see from the code, the "onkeyup" event calls a utility RichFaces method that submit a form creating a special marks for a filter informing that it is an Ajax request. Thus, any supports quantity could be added to every component, the supports define component behavior on these events.

Note

The components: **<a4j:commandLink>** , **<a4j:commandButton>** , **<a4j:poll>** and others from RichFaces library are already supplied with **<a4j:support>** functionality and there is no necessity to add the support to them.

With the help of *"onsubmit"* and *"oncomplete"* attributes the component allows using JavaScript before (for request sending conditions checking) and after an Ajax response processing termination (for performance of user-defined activities on the client)

Example:

```
<h:selectOneMenu value="#{bean.text}">
 <f:selectItem itemValue="First Item " itemLabel="First Item"/>
 <f:selectItem itemValue=" Second Item " itemLabel="Second Item"/>
 <f:selectItem itemValue=" Third Item " itemLabel="Third Item"/>
  <a4j:support event="onblur" reRender="panel" onsubmit="if(!confirm('Are you sure to
 change the option ?'))
     {form.reset(); return false;}" oncomplete="alert('Value succesfully stored')"/>
</h:selectOneMenu>
```

In example there is the condition checking (confirm) is used before request sending and message printing after the request processing is over.

The components allows different Ajax request managing ways for its various optimization in particular conditions such as:

- **Limitation of the submit area and updating area for the request.**

  "ajaxSingle" is an attribute that allows submission on the server only component sending a request, as if the component presented on a separate form.

  "limitToList" is an attribute that allows to limit areas, which are updated after the responses. Only these components defined in the *"reRender"* attribute are updated.

Example 1:

```
<h:form>
 <h:inputText value="#{person.name}">
  <a4j:support event="onkeyup" reRender="test" ajaxSingle="true"/>
 </h:inputText>
 <h:inputText value="#{person.middleName}"/>
</form>
```

In this example the request contains only the input component causes the request generation, not all the components contained on a form, because of "ajaxSingle=true" usage.

Example 2:

```
<h:form>
 <a4j:outputPanel ajaxRendered="true">
  <h:messages/>
 </a4j:outputPanel>
 <h:inputText value="#{person.name}">
  <a4j:support event="onkeyup" reRender="test" limitToList="true"/>
 </h:inputText>
 <h:outputText value="#{person.name}" id="test"/>
</form>
```

In this example the component "h:messages" is always updated (as it capturing all Ajax requests, located in ajaxRendered **<a4j:outputPanel>**), except the case when a response is sent from the input component from the example. On sending this component marks that updating area is limited to the defined in it components, it means that on its usage with *"limitToList"* ="true" the only component updated is the one with "d"="test".

- **Limitation of requests frequency and updates quantity after the responses.**

  "requestDelay" is an attribute that defines a time interval in seconds minimally permissible between responses.

  "eventQueue" is an attribute for naming of the queue where the next response is kept in till its processing, but if the next event comes in till this time is over, the waiting event is taken away, replacing with a new one.

  "ignoreDupResponces" is an attribute that allows to disable any updates on the client after an Ajax request if another Ajax request is already sent.

  "timeout" is an attribute that allows to set a time interval in millisecond to define a maximum time period of response wait time. In case of the interval interaction, a new request is sent and the previous one is canceled. Postprocessing of a response isn't performed.

  Example:

```
<h:form>
 <h:inputText value="#{person.name}">
    <a4j:support event="onkeyup" reRender="test"
    requestDelay="1000" ignoreDupResponces="true" eventsQueue="myQueue"/>
 </h:inputText>
 <h:outputText value="#{person.name}" id="test"/>
</form>
```

  This example clearly shows mentioned above attributes. If quick typing in a text field happens, every next requests sending is delayed for a second and requests quantity is reduced. The requests are kept in the queue till its the sending. Moreover, if the next request is already sent, the rerendering after the previous request is banned, and it helps to avoid unnecessary processing on the client.

6.19.5. Relevant resources links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/support.jsf?c=support] you can see the example of **<a4j:support>** usage and sources for the given example.

6.20. < a4j:loadStyle >

6.20.1. Description

Inserts stylesheet links to the head element. Render the value of the component as the value of the *"src"* attribute, after passing it to the getResourceURL() method of the ViewHandler for this application, and passing the result through the encodeResourceURL() method of the ExternalContext.

Table 6.39. a4j : loadStyle attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
id	Every component may have a unique id that is automatically created if omitted
rendered	If "false", this component is not rendered
src	name of JavaScript resource to load.

Table 6.40. Component identification parameters

Name	Value
component-type	org.ajax4jsf.LoadStyle
component-family	org.ajax4jsf.LoadStyle
component-class	org.ajax4jsf.component.html.HtmlLoadStyle
renderer-type	org.ajax4jsf.LoadStyleRenderer

6.20.2. Creating on a page

Simple Component definition on a page:

Example:

```
<a4j:loadStyle src="styles/style.css"/>
```

6.20.3. Dynamical creation of a component from Java code

Example:

```
import org.ajax4jsf.component.html.HtmlLoadStyle;
...
```

```
HtmlLoadScript myStyle = new HtmlLoadStyle();
...
```

6.20.4. Key attributes and ways of usage

As it was mentioned above this component returns its value passing it to the getResourceUR() method of the ViewHandler for this application, and passing the result via the encodeResourceURL() method of the ExternalContext.

It means that the Context will be inserts automatically to the link. And calls like resource:// will be properly handled.

Except this - you may be free to put your stylesheet links right from the child page while using facelets templates.

6.21. < a4j:poll >

6.21.1. Description

The **<a4j:poll>** component allows periodical sending of Ajax requests to a server and is used for a page updating according to a specified time interval.

Table 6.41. a4j : poll attributes

Attribute Name	Description
action	MethodBinding pointing at the application action to be invoked, if this UIComponent is activated by the user, during the Apply Request Values or Invoke Application phase of the request processing lifecycle, depending on the value of the immediate property
actionExpression	The action method binding expression.
actionListener	MethodBinding pointing at method accepting an ActionEvent with return type void
ajaxSingle	if "true", submits ONLY one field/link, instead of all form controls
binding	The attribute takes a value-binding expression for a component property of a backing bean
bypassUpdates	If "true", after process validations phase it skips updates of model beans on a force render response. It can be used for validating components input
data	Serialized (on default with JSON) data passed on the client by a developer on AJAX request. It's accessible via "data.foo" syntax
enabled	Enable/disable polling

Attribute Name	Description
eventsQueue	Name of requests queue to avoid send next request before complete other from same event. Can be used to reduce number of requests of frequently events (key press, mouse move etc.)
focus	id of element to set focus after request completed on client side
id	Every component may have a unique id that is automatically created if omitted
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response isn't actual now
immediate	True means, that the default ActionListener should be executed immediately (i.e. during Apply Request Values phase of the request processing lifecycle), rather than waiting until the Invoke Application phase
interval	Interval (in ms) for call poll requests. Default value 1000 (1 sec)
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. If "false" (default) updates all rendered by ajax region components
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
oncomplete	JavaScript code for call after request completed on client side
onsubmit	JavaScript code for call before submission of ajax event
rendered	If "false", this component is not rendered
reRender	Id['s] (in format of call UIComponent.findComponent()) of components, rendered in case of AjaxRequest caused by this component. Can be single id, comma-separated list of Id's, or EL Expression with array or Collection
status	ID (in format of call UIComponent.findComponent()) of Request status component

Attribute Name	Description
timeout	Timeout (in ms) for request

Table 6.42. Component identification parameters

Name	Value
component-type	org.ajax4jsf.Poll
component-family	org.ajax4jsf.components.AjaxPoll
component-class	org.ajax4jsf.component.html.AjaxPoll
renderer-type	org.ajax4jsf.components.AjaxPollRenderer

6.21.2. Creating on a page

To create the simplest variant on a page use the following syntax:

Example:

```
<a4j:poll interval="500" reRender="grid"/>
```

6.21.3. Dynamical creation of a component from Java code

Example:

```
import org.ajax4jsf.component.html.AjaxPoll;
...
AjaxPoll myPoll = new AjaxPoll();
...
```

6.21.4. Key attributes and ways of usage

The **<a4j:poll>** componet is used for periodical polling of server data. In order to use the component it's necessary to set an update interval. The *"interval"* attribute defines an interval in milliseconds between the previous response and the next request. The total period beetween two requests generated by the **<a4j:poll>** component is a sum of an *"interval"* attribute value and server response time. Default value for *"interval"* attribute is set to "1000" milliseconds (1 second). See an example of definition in the "Creating on a page" section [98].

The *"timeout"* attribute defines response waiting time in milliseconds. If a response isn't received during this period a connection is aborted and the next request is sent. Default value for *"timeout"* attribute isn't set.

The *"enabled"* attribute defines should the **<a4j:poll>** send request or not. It's necessary to render the **<a4j:poll>** to apply the current value of *"enabled"* attribute. You can use an EL-expression for *"enabled"* attribute to point to a bean property. An example of usage of mentioned above attributes [98] is placed below:

Example:

```
...
    <a4j:region>
        <h:form>
            <a4j:poll id="poll" interval="1000" enabled="#{userBean.pollEnabled}"
 reRender="poll,grid"/>
        </h:form>
    </a4j:region>
    <h:form>
        <h:panelGrid columns="2" width="80%" id="grid">
            <h:panelGrid columns="1">
                <h:outputText value="Polling Inactive" rendered="#{not
 userBean.pollEnabled}"></h:outputText>
                <h:outputText value="Polling Active"
 rendered="#{userBean.pollEnabled}"></h:outputText>
                <a4j:commandButton style="width:120px" id="control"
                                   value="#{userBean.pollEnabled?'Stop':'Start'}
 Polling"
                                   reRender="poll, grid">
                    <a4j:actionparam name="polling" value="#{!userBean.pollEnabled}"
                                     assignTo="#{userBean.pollEnabled}"/>
                </a4j:commandButton>
            </h:panelGrid>
                <h:outputText id="serverDate" style="font-size:16px" value="Server
 Date: #{userBean.date}"/>
        </h:panelGrid>
    </h:form>
...
```

The example shows how date and time are updated on a page in compliance with data taken from a server. The **<a4j:poll>** componet sends requests to the server every second. *"reRender"* attribute for **<a4j:poll>** contains value of its own Id. Hence, it renders itself for applying the current value of *"enabled"* attribute.

Note:

The form around the **<a4j:poll>** component is required.

6.21.5. Relevant resources links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/poll.jsf?c=poll] you can see the example of **<a4j:poll>** usage and sources for the given example.

The aditional information about component usage you can find here : RichFaces Users Forum [http://jboss.com/index.html?module=bb&op=viewtopic&t=103909].

6.22. < a4j:page >

6.22.1. Description

<a4j:page> is a deprecated component used for solving of incompatibility problems in early Ajax4jsf and MyFaces versions. The component encodes the full html page structure.

Table 6.43. a4j : page attributes

Attribute Name	Description
ajaxListener	MethodBinding representing an action listener method that will be notified when this component is activated by the ajax Request and handle it. The expression must evaluate to a public method that takes an AjaxEvent parameter, with a return type of void
binding	The attribute takes a value-binding expression for a component property of a backing bean
contentType	Set custom mime content type to response
dir	Direction indication for text that does not inherit directionality. Valid values are "LTR" (left-to-right) and "RTL" (right-to-left)
format	Page layout format (html, xhtml, html-transitional, html-3.2) for encoding DOCTYPE, namespace and Content-Type definitions
id	Every component may have a unique id that is automatically created if omitted
immediate	Flag indicating that, if this component is activated by ajaxrequest, notifications should be delivered to interested listeners and actions immediately (that is, during Apply Request Values phase) rather than waiting until Invoke Application phase
lang	Code describing the language used in the generated markup for this component
namespace	Set html element default namespace
onload	JavaScript code to execute on a page load.
onunload	JavaScript code to execute on a page unload.
pageTitle	String for output as a page title.
rendered	If "false", this component is not rendered
selfRendered	if "true", self-render subtree at InvokeApplication (or Decode, if immediate property set to true) phase
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
title	

Attribute Name	Description
	Advisory title information about markup elements generated for this component

Table 6.44. Component identification parameters

Name	Value
component-type	org.ajax4jsf.components.Page
component-family	org.ajax4jsf.components.AjaxRegion
component-class	org.ajax4jsf.component.html.HtmlPage
renderer-type	org.ajax4jsf.components.AjaxPageRenderer

6.22.2. Creating on a page

This component should be defined as a child component for **<f:view>:**

```
<f:view>
 <a4j:page>
  <f:facet name="head">
   <!--...Head Content here-->
  </f:facet>
   <!--...Page Content here-->
 </a4j:page>
</f:view>
```

This structure is rendered as:

Example:

```
<HTML>
 <HEAD>
 <!--...Head Content here-->
 </HEAD>
<body >
 <!--...Page Content Here-->
</body>
</HTML>
```

6.22.3. Dynamical creation of a component from Java code

Example:

```
import org.ajax4jsf.component.html.HtmlPage;
...
HtmlPage myPage = new HtmlPage();
...
```

6.22.4. Key attributes and ways of usage

The component is mostly used to solve the following problem with MyFaces for erlier Ajax4jsf versions: in MyFaces **<f:view>** doesn't get control over the " *RENDER_RESPONSE* " phase, thus Ajax can't get control and make a response also. To avoid this problem it was necessary to use **<a4j:page>** on a page round the Ajax updatable area. In the last versions of both frameworks the problem is successfully fixed and no **<a4j:page>** usage is required.

The component is rendered as a full HTML page template (it was shown in the example). The " *head* " section is defined with the help of the corresponding facet with the name="head" and also there is an attribute with the same name for *"contentType"* definition.

6.22.5. Relevant resources links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/page.jsf?c=page] you can see the example of **<a4j:page>** usage and sources for the given example.

6.23. < a4j:include >

6.23.1. Description

The **<a4j:include>** component is used for page areas update after an Ajax request according to the faces-config Navigation Rules and for implementation of wizard-like parts work in Ajax mode.

Table 6.45. a4j : include attributes

Attribute Name	Description
ajaxRendered	Defines, whether the content of this component must be (or not) included in AJAX response created by parent AJAX Container, even if it is not forced by reRender list of ajax action. Ignored if component marked to output by Ajax action. default false
binding	The attribute takes a value-binding expression for a component property of a backing bean
dir	Direction indication for text that does not inherit directionality. Valid values are "LTR" (left-to-right) and "RTL" (right-to-left)
id	Every component may have a unique id that is automatically created if omitted
keepTransient	Flag for mark all child components to non-transient. If true, all children components will be set to non-transient state and keep in saved components tree. For output in self-renderer region all content (By default, all content in <f:verbatim> tags and non-jsf elements

Attribute Name	Description
	in facelets, marked as transient - since, self-rendered ajax regions don't plain output for ajax processing).
lang	Code describing the language used in the generated markup for this component
layout	HTML layout for generated markup. Possible values: "block" for generating an HTML element, "inline" for generating an HTML element, and "none" for generating no HTML element. There is a minor exception for the "none" case where a child element has the property "rendered" set to "false". In this case, we create an empty element with same ID as the child element to use as a placeholder for later processing.
rendered	If "false", this component is not rendered
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
title	Advisory title information about markup elements generated for this component
viewId	viewId for included page.

Table 6.46. Component identification parameters

Name	Value
component-type	org.ajax4jsf.Include
component-family	javax.faces.Output
component-class	org.ajax4jsf.component.html.Include
renderer-type	org.ajax4jsf.components.AjaxIncludeRenderer

6.23.2. Creating on a page

To use the component, it's necessary to place the following strings on a page:

Example:

```
<h:panelGroup id="wizard">
  <a4j:include  viewId="/pages/include/first.xhtml" />
</h:panelGroup>
```

For navigation inside a page defined in viewId any components responsible for Ajax requests to the server generation are used.

For example, the following component on a page "/pages/include/first.xhtml"

Example:

```
...
<a4j:commandButton action="next" reRender="wizard"/>
...
```

And in faces-config it's defined:

Example:

```
<navigation-rule>
  <from-view-id>/pages/include/first.xhtml</from-view-id>
  <navigation-case>
   <from-outcome>next</from-outcome>
   <to-view-id>/pages/include/second.xhtml</to-view-id>
  </navigation-case>
 </navigation-rule>
```

In this case after a click on a button defined inside "first.xhtml" view, navigation is performed after an Ajax request (the same as standard JSF one) only inside this view.

6.23.3. Dynamical creation of a component from Java code

```
<import org.ajax4jsf.component.html.Include;
...
Include myInclude = new Include();
...
```

If **<a4j:include>** is defined this way, any Ajax request returning outcome inside generates navigation with this **<a4j:include>** .

Ajax Action for navigation implementation inside view must be placed inside **<a4j:include>** pages. Navigation defined by these pages is applied to the **<a4j:include>** element current for them.

As in the general case for Ajax Action component, if the **<a4j:action>** component inside **<a4j:include>** returns outcome defined as **<redirect/>,** Ajax submit is performed with navigation of the whole page and not only of the current view.

6.23.4. Relevant resources links

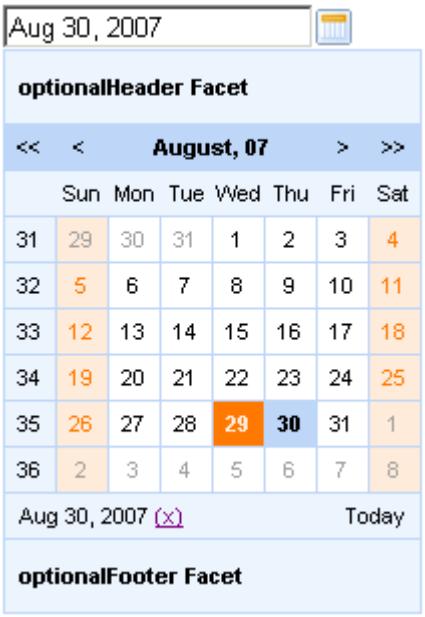
Here [http://livedemo.exadel.com/richfaces-demo/richfaces/include.jsf?c=include] you can see the example of **<a4j:include>** usage and sources for the given example.

Some additional information can be found on the Ajax4Jsf Users Forum. [http://jboss.com/index.html?module=bb&op=viewtopic&t=104158]

6.24. < rich:calendar >

6.24.1. Description

The **<rich:calendar>** component is used for creating monthly calendar elements on a page.



6.24.2. Key Features

- Highly customizable look and feel
- Popup representation
- Disablement support
- Smart and user-defined positioning
- Cells customization
- Macro substitution based on tool bars customization

Table 6.47. rich : calendar attributes

Attribute Name	Description
ajaxSingle	if "true", submits ONLY one field/link, instead of all form controls
binding	The attribute takes a value-binding expression for a component property of a backing bean
boundaryDatesMode	Used for the dates boundaries in the list. Valid values are "inactive" (Default) â## dates inactive and gray colored, "scroll" â## boundaries work as month scrolling controls, and "select" â## boundaries work

Attribute Name	Description
	in the same way as "scroll" but with the date clicked selection
buttonClass	Style Class attribute for the popup button
buttonIcon	Defines icon for the popup button element. The attribute is ignored if the "buttonLabel" is set
buttonIconDisabled	Defines disabled icon for the popup button element. The attribute is ignored if the "buttonLabel" is set
buttonLabel	Defines label for the popup button element. If the attribute is set "buttonIcon" and "buttonIconDisabled" are ignored
bypassUpdates	If "true", after process validations phase it skips updates of model beans on a force render response. It can be used for validating components input
cellHeight	attribute to set fixed cells height
cellWidth	attribute to set fixed cells width
converter	Id of Converter to be used or reference to a Converter
converterMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the converter message, replacing any message that comes from the converter
currentDate	Defines current date
currentDateChangeListener	MethodBinding representing an action listener method that will be notified after date selection
dataModel	Used to provide data for calendar elements. If data is not provided, all Data Model related functions are disabled
datePattern	Defines date pattern
dayStyleClass	Should be binded to some JS function that will provide style classes for special sets of days highlighting.
direction	Defines direction of the calendar popup (top-left, top-right, bottom-left, bottom-right (Default), auto)
disabled	If "true", rendered is disabled. In "popup" mode both controls are disabled
enableManualInput	If "true" calendar input will be editable and it will be possible to change the date manualy. If "false" value

Attribute Name	Description
	for this attribute makes a text field "read-only", so the value can be changed only from a handle
eventsQueue	Name of requests queue to avoid send next request before complete other from same event. Can be used to reduce number of requests of frequently events (key press, mouse move etc.)
focus	id of element to set focus after request completed on client side
horizontalOffset	Sets the horizontal offset between button and calendar element conjunction point
id	Every component may have a unique id that is automatically created if omitted
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response isn't actual now
immediate	A flag indicating that this component value must be converted and validated immediately (that is, during Apply Request Values phase), rather than waiting until a Process Validations phase
inputClass	Style Class attribute for the text field
inputStyle	Style attribute for text field
isDayEnabled	Should be binded to some JS function that returns day state.
jointPoint	Set the corner of the button for the popup to be connected with (top-left, top-right, bottom-left (Default), bottom-right, auto)
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. If "false" (default) updates all rendered by ajax region components
locale	Used for locale definition
mode	Valid values = ajax or client
monthLabels	Attribute that allows to customize names of the months. Should accept list with the month names

Attribute Name	Description
monthLabelsShort	Attribute that allows to customize short names of the months. Should accept list with the month names
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
oncollapse	onCollapse event handler
oncomplete	JavaScript code for call after request completed on client side
oncurrentdateselect	onCurrentDateSelect event handler
ondatemouseout	onDateMouseOut event handler
ondatemouseover	onDateMouseOver event handler
ondateselect	onDateSelect event handler
ondateselected	onDateSelected event handler
onexpand	onExpand event handler
oninputblur	input onBlur event handler
oninputchange	input onChange event handler
oninputclick	input onClick event handler
oninputfocus	input onFocus event handler
oninputkeydown	input onKeyDown event handler
oninputkeypress	input onKeyPress event handler
oninputkeyup	input onKeyUp event handler
oninputselect	input onSelect event handler
popup	If "true" calendar will be rendered initially as hidden with additional elements for calling as popup
preloadDateRangeBegin	Define the initial range of date which will be loaded to client from dataModel under rendering
preloadDateRangeEnd	Defines the last range of date which will be loaded to client from dataModel under rendering
rendered	If "false", this component is not rendered
requestDelay	Attribute defines the time (in ms.) that the request will be wait in the queue before it is ready to send. When the delay time is over, the request will be sent to the

Attribute Name	Description
	server or removed if the newest 'similar' request is in a queue already
required	If "true", this component is checked for non-empty input
requiredMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the validation message for the "required" facility, if the "required" facility is used
reRender	Id['s] (in format of call UIComponent.findComponent()) of components, rendered in case of AjaxRequest caused by this component. Can be single id, comma-separated list of Id's, or EL Expression with array or Collection
showApplyButton	If false ApplyButton should not be shown
showInput	"false" value for this attribute makes text field invisible. If "true" - input field will be shown
showScrollerBar	If false this bar should not be shown
showWeekDaysBar	If false this bar should not be shown
showWeeksBar	If false this bar should not be shown
status	ID (in format of call UIComponent.findComponent()) of Request status component
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
timeout	Response waiting time on a particular request. If a response is not received during this time, the request is aborted
timeZone	Used for current date calculations
todayControlMode	Possible values are "scroll", "select", "hidden"
toolTipMode	Used to specify mode to load tooltips. Valid values are "none", "single" and "batch"
validator	MethodBinding pointing at a method that is called during Process Validations phase of the request processing lifecycle, to validate the current value of this component

Attribute Name	Description
validatorMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the validator message, replacing any message that comes from the validator
value	The initial value to set when rendered for the first time
valueChangeListener	Listener for value changes
verticalOffset	Sets the vertical offset between button and calendar element conjunction point
weekDayLabels	List of the day names displays on the days bar in the following way "Sun, Mon, Tue, Wed, â#¡"
weekDayLabelsShort	Attribute that allows to customize short names of the weeks. Should accept list with the weeks names.
zindex	Attribute is similar to the standard HTML attribute and can specify window placement relative to the content

Table 6.48. Component identification parameters

Name	Value
component-type	org.richfaces.Calendar
component-class	org.richfaces.component.html.HtmlCalendar
component-family	org.richfaces.Calendar
renderer-type	org.richfaces.CalendarRenderer
tag-class	org.richfaces.taglib.CalendarTag

6.24.3. Creating the Component with a Page Tag

To create the simplest variant on a page use the following syntax:

Example:

```
...
      <rich:calendar popup="false"/>
...
```

6.24.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlCalendar;
...
HtmlCalendar myCalendar = new HtmlCalendar();
```

```
...
```

6.24.5. Details of Usage

The *"popup"* attribute defines calendar representation mode on a page. If it's "true" the calendar is represented on a page as an input field and a button. Clicking on the button calls the calendar popup as it's shown on the picture below.

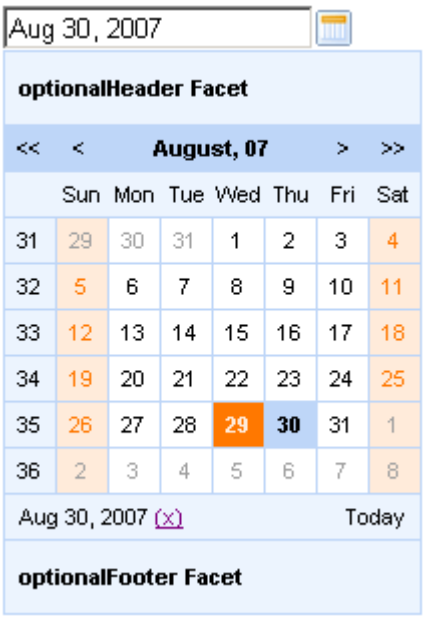


Figure 6.1. Using the *"popup"* attribute

Usage *"currentDate"* attribute isn't available in the popup mode.

The **<rich:calendar>** component ables to render pages of days in two modes. Switching mode could be defined with the *"mode"* attribute with two possible parameters: ajax and client. Default value is set to the "client".

- Ajax

Calendar requests portions of data from Data Model for a page rendering. If *"dataModel"* attribute has "null" value, data requests are not sent. In this case the "ajax" mode is equal to the "client".

- Client

Calendar loads an initial portion of data in a specified range and use this data to render months. Additional data requests are not sent.

> **Note:**
> *"preloadDateRangeBegin"* and *"preloadDateRangeEnd"* attributes was designed only for the "client" mode to load some data initially.

"ondataselect" attribute is used to define an event that is triggered before date selection.

"ondateselected" attribute is used to define an event that is triggered after date selection.

For example, to fire some event after date selection you should use **<a4j:support>** . And it should be bound to *"ondateselected"* event as it's shown in the example below:

```
...
    <rich:calendar id="date" value="#{bean.dateTest}">
        <a4j:support event="ondateselected" reRender="mainTable"/>

    </rich:calendar>
...
```

"ondataselect" could be used for possibility of date selection canceling. See an example below:

```
...
    <rich:calendar id="date" value="#{bean.dateTest}" ondateselect="if (!confirm('Are
 you sure to change date?')){return false;}"/>
...
```

How to use these attributes see also on the RichFaces Users Forum [http://www.jboss.com/index.html?module=bb&op=viewtopic&p=4092275#4092275].

There are three button-related attributes:

- *"buttonLabel"* defines a label for the button. If the attribute is set "buttonIcon" and "buttonIconDisabled" are ignored
- *"buttonIcon"* defines an icon for the button
- *"buttonIconDisabled"* defines an icon for the disabled state of the button

The *"direction"* and *"jointPoint"* attributes are used for defining aspects of calendar appearance.

The possible values for the *"direction"* are:

- top-left - a calendar drops to the top and left
- top-right - a calendar drops to the top and right
- bottom-left - a calendar drops to the bottom and left
- bottom-right - a calendar drops to the bottom and right
- auto - smart positioning activation

By default, the *"direction"* attribute is set to "bottom-right".

The possible values for the *"jointPoint"* are:

- top-left - a calendar docked to the top-left point of the button element
- top-right - a calendar docked to the top-right point of the button element

- bottom-left - a calendar docked to the bottom-left point of the button element
- bottom-right - a calendar docked to the bottom-right point of the button element
- auto - smart positioning activation

By default, the *"jointPoint"* attribute is set to "bottom-left".

The **<rich:calendar>** component allows to use *"header"*, *"footer"*, *"optionalHeader"*, *"optionalFooter"* facets. The following elements are available in these facets: {currentMonthControl}, {nextMonthControl}, {nextYearControl}, {previousYearControl}, {previousMonthControl}, {todayControl}, {selectedDateControl}. These elements could be used for labels output.

Also you can use *"weekNumber"* facet with available {weekNumber}, {elementId} elements and *"weekDay"* facet with {weekDayLabel}, {weekDayLabelShort}, {weekDayNumber}, {isWeekend}, {elementId} elements. {weekNumber}, {weekDayLabel}, {weekDayLabelShort}, {weekDayNumber} elements could be used for labels output, {isWeekend}, {elementId} - for additional processing in JavaScript code.

These elements are shown on the picture below.

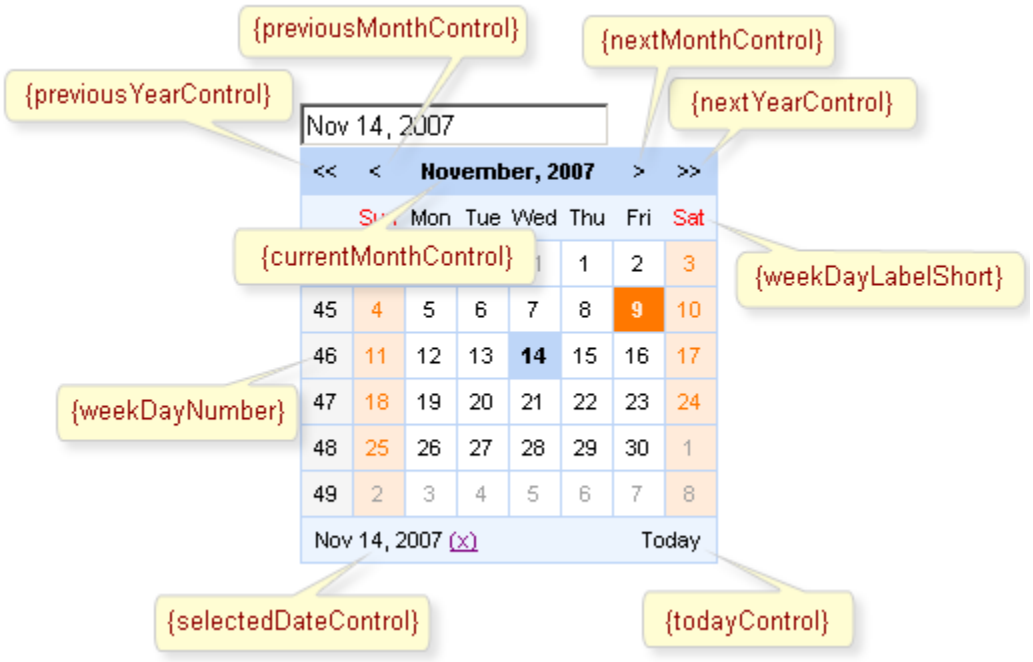


Figure 6.2. Available elements

Simple example of usage is placed below.

Example:

```
...
<!--Styles for cells -->
```

```
<style>
    .width100{
        width:100%;
    }
    .talign{
        text-align:center;
    }
</style>

<rich:calendar id="myCalendar" popup="true" locale="#{calendarBean.locale}"
 value="#{bean.date}"
                              preloadRangeBegin="#{bean.date}"
 preloadRangeEnd="#{bean.date}" selectedDate="#{bean.date}" cellWidth="40px"
 cellHeight="40px">

<!-- Customization with usage of facets and accessible elements -->

    <f:facet name="header">
        <h:panelGrid columns="2" width="100%" columnClasses="width100, fake">
            <h:outputText value="{selectedDateControl}" />
            <h:outputText value="{todayControl}"  style="font-weight:bold;
 text-align:left"/>
        </h:panelGrid>
    </f:facet>
    <f:facet name="weekDay">
        <h:panelGroup style="width:60px; overflow:hidden;" layout="block">
            <h:outputText value="{weekDayLabelShort}"/>
        </h:panelGroup>
    </f:facet>
    <f:facet name="weekNumber">
         <h:panelGroup>
            <h:outputText value="{weekNumber}" style="color:red"/>
        </h:panelGroup>
     </f:facet>
     <f:facet name="footer">
        <h:panelGrid columns="3" width="100%" columnClasses="fake, width100 talign">

            <h:outputText value="{previousMonthControl}" style="font-weight:bold;"/>
            <h:outputText value="{currentMonthControl}" style="font-weight:bold;"/>
            <h:outputText value="{nextMonthControl}" style="font-weight:bold;"/>
        </h:panelGrid>
    </f:facet>
    <h:outputText value="{day}"></h:outputText>
</rich:calendar>
...
```

This is a result:

Figure 6.3. Facets usage

As it's shown on the picture above {selectedDateControl}, {todayControl} elements are placed in the *"header"* facet, {previousMonthControl}, {currentMonthControl}, {nextMonthControl} - in the *"footer"* facet, {weekDayLabelShort} - in the *"weekDay"* facet, {nextYearControl}, {previousYearControl} are absent. Numbers of weeks are red colored.

The **<rich:calendar>** component allows to show and manage time. It's necessary to define time in a pattern (for example, it could be defined as "d/M/yy HH:mm"). Then after you choose some data in the calendar, it becomes possible to manage time for this date. For time editing it's necessary to click on its field (see a picture below). To clean the field click on the "Clean".

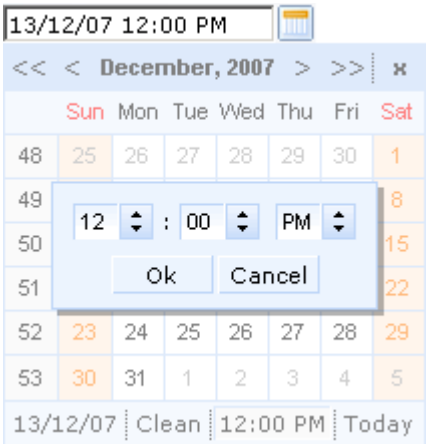


Figure 6.4. Timing

It's possible to program events for calendar from JavaScript code. A simplest example of usage JavaScript API is placed below:

Example:

```
...
         <a4j:form id="form">
                         <rich:calendar popup="true" rendered="#{!bean.check}"
 value="#{bean.date}" id="c"/>
                         <!--The link which is used to call a calendar popup
 externally-->
                         <a onclick="$('form:c').component.Expand()" href="#">Show</a>
        </a4j:form>
...
```

Also the discussion about this problem can be found on the RichFaces Users Forum [http://www.jboss.com/index.html?module=bb&op=viewtopic&p=4078301#4078301].

The **<rich:calendar>** component provides the possibility to use a special Data Model to define data for element rendering. Data Model includes two major interfaces:

- CalendarDataModel
- CalendarDataModelItem

CalendarDataModel provides the following function:

- CalendarDataModelItem[] getData(Date[]);

This method is called when it's necessary to represent the next block of CalendarDataItems. It happens during navigation to the next (previous) month or in any other case when calendar renders. This method is called in *"Ajax"* mode when the calendar renders a new page.

CalendarDataModelItem provides the following function:

- Date getDate() - returns date from the item. Default implementation returns date.
- Boolean isEnabled() - returns *"true"* if date is *"selectable"* on the calendar. Default implementation returns "true".
- String getStyleClass() - returns string appended to the style class for the date span. For example it could be "relevant holyday". It means that the class could be defined like the "rich-cal-day-relevant-holyday" one. Default implementation returns empty string.
- Object getData() - returns any additional payload that must be JSON-serializable object. It could be used in the custom date representation on the calendar (inside the custom facet).

6.24.6. JavaScript API

Table 6.49. JavaScript API

Function	Description
selectDate(date)	

Function	Description
	Selects the date specified. If the date isn't in current month - performs request to select
isDateEnabled(date)	Checks if given date is selectable
enableDate(date)	Enables date cell control on the calendar
disableDate(date)	Disables date cell control on the calendar
enableDates(date[])	Enables dates cell controls set on the calendar
disableDates(date[])	Disables dates cell controls set on the calendar
nextMonth()	Navigates to next month
nextYear()	Navigates to next year
prevMonth()	Navigates to previous month
prevYear()	Navigates to previous year
today()	Selects today date
getSelectedDate()	Returns currently selected date
Object getData()	Returns additional data for the date
enable()	Enables calendar
disable()	Disables calendar
getCurrentMonth()	Returns number of the month currently being viewed
getCurrentYear()	Returns number of the year currently being viewed
Collapse()	Collapses calendar element
Expand()	Expands calendar element

6.24.7. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:calendar>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:calendar>** component

6.24.8. Skin Parameters Redefinition

Table 6.50. Skin parameters redefinition for a popup element

Skin parameters	CSS properties
panelBorderColor	border-color

Table 6.51. Skin parameters redefinition for headers (header, optional header)

Skin parameters	CSS properties
panelBorderColor	border-bottom-color
additionalBackgroundColor	background-color
generalSizeFont	font-size
generalFamilyFont	font-family

Table 6.52. Skin parameters redefinition for footers (footer, optional footer) and names of working days

Skin parameters	CSS properties
panelBorderColor	border-top-color
panelBorderColor	border-right-color
additionalBackgroundColor	background
generalSizeFont	font-size
generalFamilyFont	font-family

Table 6.53. Skin parameters redefinition for weeks numbers

Skin parameters	CSS properties
panelBorderColor	border-bottom-color
panelBorderColor	border-right-color
additionalBackgroundColor	background
calendarWeekBackgroundColor	background-color
generalSizeFont	font-size
generalFamilyFont	font-family

Table 6.54. Skin parameters redefinition for a toolbar and names of months

Skin parameters	CSS properties
headerBackgroundColor	background-color

Skin parameters	CSS properties
headerSizeFont	font-size
headerFamilyFont	font-family
headerWeightFont	font-weight
headerTextColor	color

Table 6.55. Skin parameters redefinition for cells with days

Skin parameters	CSS properties
panelBorderColor	border-bottom-color
panelBorderColor	border-right-color
generalBackgroundColor	background-color
generalSizeFont	font-size
generalFamilyFont	font-family

Table 6.56. Skin parameters redefinition for holiday

Skin parameters	CSS properties
calendarHolidaysBackgroundColor	background-color
calendarHolidaysTextColor	color

Table 6.57. Skin parameters redefinition for cell with a current date

Skin parameters	CSS properties
calendarCurrentBackgroundColor	background-color
calendarCurrentTextColor	color

Table 6.58. Skin parameters redefinition for a selected day

Skin parameters	CSS properties
headerBackgroundColor	background-color
headerTextColor	color
headerWeightFont	font-weight

6.24.9. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

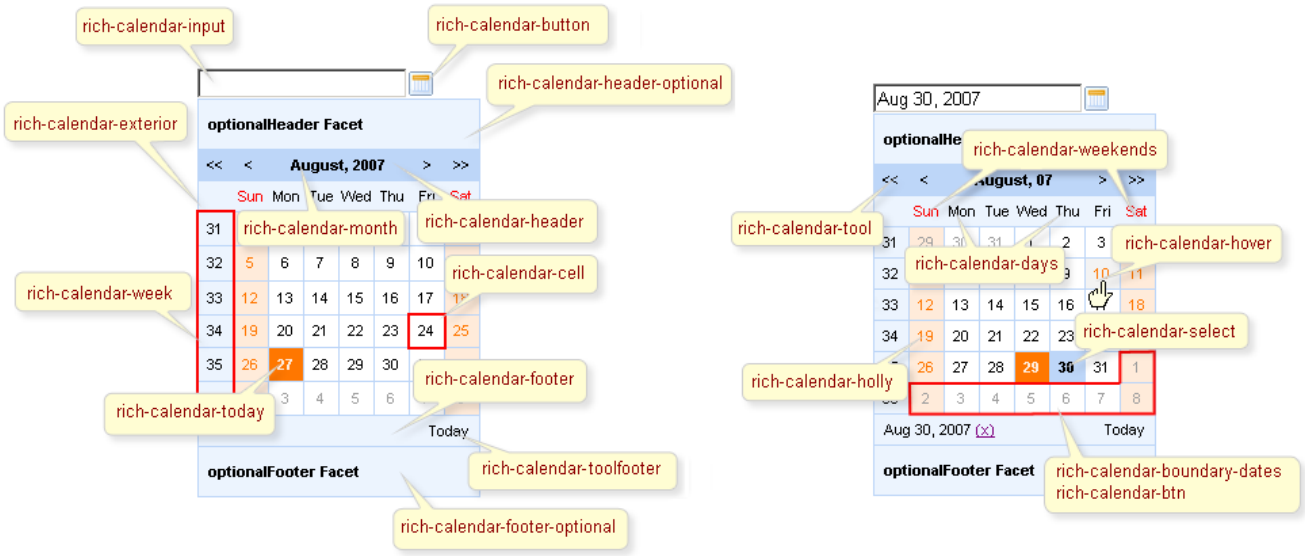


Figure 6.5. Style classes

Table 6.59. Classes names that define an input field and a button appearance

Class name	Description
rich-calendar-input	Defines styles for an input field
rich-calendar-button	Defines styles for a popup button

Table 6.60. Classes names that define a days appearance

Class name	Description
rich-calendar-days	Defines styles for names of working days in a header
rich-calendar-weekends	Defines styles for names of weekend in a header
rich-calendar-week	Defines styles for weeks numbers
rich-calendar-today	Defines styles for cell with a current date
rich-calendar-cell	Defines styles for cells with days
rich-calendar-holly	Defines styles for holiday
rich-calendar-select	Defines styles for a selected day
rich-calendar-hover	Defines styles for a hovered day

Table 6.61. Classes names that define a popup element

Class name	Description
rich-calendar-popup	Defines styles for a popup element
rich-calendar-exterior	Defines styles for a popup element exterior

Class name	Description
rich-calendar-tool	Defines styles for toolbars
rich-calendar-month	Defines styles for names of months
rich-calendar-header-optional	Defines styles for an optional header
rich-calendar-footer-optional	Defines styles for an optional footer
rich-calendar-header	Defines styles for a header
rich-calendar-footer	Defines styles for a footer
rich-calendar-boundary-dates	Defines styles for an active boundary button
rich-calendar-btn	Defines styles for an inactive boundary date
rich-calendar-toolfooter	Defines styles for a today control date

In order to redefine styles for all **<rich:calendar>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:calendar>** components, define your own style classes in the corresponding **<rich:calendar>** attributes.

6.24.10. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/calendar.jsf?c=calendar] you can see the example of **<rich:calendar>** usage and sources for the given example.

How to use JavaScript API see on the RichFaces Users Forum [http://www.jboss.com/index.html?module=bb&op=viewtopic&p=4078301#4078301].

6.25. < rich:componentControl >

6.25.1. Description

The **<rich:componentControl>** component allows to manage other components or operation on other components via API.

Table 6.62. rich : componentControl attributes

Attribute Name	Description
attachTiming	Defines an Id of a component or HTML element listened by the control component
attachTo	Client identifier of the component or id of the existing DOM element that is a source for given event. If attachTo is defined, the event is attached on the client

Attribute Name	Description
	according to the AttachTiming attribute. If attachTo is not defined, the event is attached on the server to the closest in the component tree parent component.
binding	The attribute takes a value-binding expression for a component property of a backing bean
disableDefault	If "true", it is used to avoid a problem with form submit and modalPanel showing
event	The Event that is used to trigger the operation on the target component
for	Client identifier of the target component.
id	Every component may have a unique id that is automatically created if omitted
name	The optional name of the function that might be used to trigger the operation on the target component
operation	The function of Javascript API that will be invoked. The API method is attached to the 'component' property of the root DOM element that represents the target component. The function has two parameters - event and params. See: 'params' attribute for details.
params	The set of parameters passed to the function of Javascript API that will be invoked. The JSON syntax is used to define the parameters, but without open and closed curve bracket. As an alternative, the set of f:param can be used to define the parameters passed to the API function. If both way are used to define the parameters, both set are concatenated. if names are equals, the f:param has a priority.
rendered	If "false", this component is not rendered

Table 6.63. Component identification parameters

Name	Value
component-type	org.richfaces.ComponentControl
component-class	org.richfaces.component.html.HtmlComponentControl
component-family	org.richfaces.ComponentControl
renderer-type	org.richfaces.ComponentControlRenderer
tag-class	org.richfaces.taglib.ComponentControlTag

6.25.2. Creating the Component with a Page Tag

To create the simplest variant on a page use the following syntax:

Example:

```
...
      <rich:componentControl attachTo="doExpandCalendarID" for="ccCalendarID"
 event="onclick" operation="Expand" />
...
```

6.25.3. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlComponentControl;
...
HtmlComponentControl myCalendar = new HtmlComponentControl();
...
```

6.25.4. Details of Usage

There are three ways to attach the **<rich:componentControl>** to another component.

- Defining a name of a function that is generated. An "event" argument is passed to this function.

An example is placed below:

```
...
    <rich:componentControl name="ffunction" for="comp_ID" operation="show"/>
...
```

According to this code a function with name "call" is generated. It is used in JavaScript code to trigger an operation on the target component with defined id="comp_ID".

The generated function is shown below:

```
function ffunction (event) {
}
```

- Attaching to a parent component (usage is similar to **<a4j:support>** component)

An example is placed below:

```
...
    <rich:modalPanel id="ccModalPanelID" onshow="alert(event.parameters.show)"
 onhide="alert(event.parameters.hide)">
        ...
    </rich:modalPanel>
    <h:commandButton value="Show Modal Panel">
        <rich:componentControl for="ccModalPanelID" event="onclick"
 disableDefault="true" operation="show" params="show:'componentControl work(show)'"
 />
```

```
    </h:commandButton>
...
```

In the example is shown a possibility to manage **<rich:modalpanel>** component via **<h:commandButton>** . The *"for"* attribute contains value of an Id of **<rich:modalpanel>** component. The *"operation"* attribute contains a name of JavaScript API function. The *"disableDefault"* attribute with "true" value is used instead of onclick="return false;" attribute for **<h:commandButton>** to avoid a problem with form submit and modalPanel showing.

- Attaching with *"attachTo"* attribute

An example is placed below:

```
...
    <rich:calendar popup="#{componentControl.calendarPopup}" id="ccCalendarID" />
    ...
    <f:verbatim>
        <a href="#" id="doExpandCalendarID">Calendar (nextYear)</a>
    </f:verbatim>
    <rich:componentControl attachTo="doExpandCalendarID" for="ccCalendarID"
 event="onclick" disableDefault="true" operation="nextYear" />
...
```

In the example is shown a possibility to manage the **<rich:calendar>** component. The *"attachTo"* attribute contais a value of an Id of <a> tag. The *"for"* attribute contains value of an Id of **<rich:calendar>** component. The *"operation"* attribute contains a name of JavaScript API function. Thus, clicking on the link represents the next year on the calendar.

6.25.5. Look-and-Feel Customization

<rich:componentControl> has no skin parameters and custom style classes, as the component isn't visual.

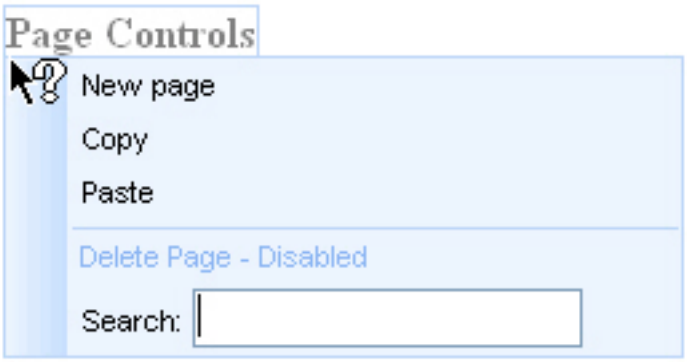
6.25.6. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/componentControl.jsf?c=componentControl] you can see an example of **<rich:componentControl>** usage and sources for the given example.

6.26. < rich:contextMenu >

6.26.1. Description

The **<rich:contextMenu>** component is used for creation multileveled context menus that are activated after a user defines an event (onmouseover, onclick, etc.) on any element on the page.



6.26.2. Key Features

- Skinnable context menu and child items
- Highly customizable look and feel
- Disablement support
- Pop-up appearance event customization

Table 6.64. rich : contextMenu attributes

Attribute Name	Description
attached	If the value of the "attached" attribute is true, component is attached to parent component
binding	The attribute takes a value-binding expression for a component property of a backing bean
disableDefaultMenu	Forbids default handling for adjusted event
disabledItemClass	Space-separated list of CSS style class(es) that are be applied to disabled item of this component
disabledItemStyle	CSS style(s) is/are to be applied to disabled item when this component is rendered.
event	Defines an event on the parent element that triggers the menu's appearance
hideDelay	Delay between losing focus and menu closing.
id	Every component may have a unique id that is automatically created if omitted
itemClass	Space-separated list of CSS style class(es) that are be applied to item of this component
itemStyle	CSS style(s) is/are to be applied to item when this component is rendered.

Attribute Name	Description
oncollapse	Event must occurs on menu closure
onexpand	Event must occurs on menu opening
ongroupactivate	HTML: script expression; some group was activated
onitemselect	HTML: script expression; some item was selected
onmousemove	HTML: script expression; a pointer was moved within
onmouseout	HTML: script expression; a pointer was moved away
onmouseover	HTML: script expression; a pointer was moved onto
popupWidth	Set minimal width for the all of the lists that will appear
rendered	If "false", this component is not rendered
selectItemClass	Space-separated list of CSS style class(es) that are be applied to selected item of this component.
selectItemStyle	CSS style(s) is/are to be applied to selected item when this component is rendered.
showDelay	Delay between event and menu showing.
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
submitMode	Set the submission mode for all menu items of the menu except ones where this attribute redefined (ajax, server(Default), none)

Table 6.65. Component identification parameters

Name	Value
component-type	org.richfaces.ContextMenu
component-class	org.richfaces.component.html.ContextMenu
component-family	org.richfaces.ContextMenu
renderer-type	org.richfaces.DropDownMenuRenderer
tag-class	org.richfaces.taglib.ContextMenuTagHandler

6.26.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
<h:panelGroup id="MyGroup">
        <!-- Panel Content-->
        <rich:contextMenu id="Menu1">
                <!--Nested menu components-->
        </rich:contextMenu>
</h:panelGroup>
...
```

6.26.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlContextMenu;
...
HtmlContextMenu myContextMenu = new HtmlContextMenu();
...
```

6.26.5. Details of Usage

<rich:contexMenu> is a support-like component. It is possible to define it as a child to some component and specify some events that trigger the menu.

The *"attached"* attribute defines the state of the component. If the value of the *"attached"* attribute is true, component is attached to parent component.

Example:

```
...
<rich:dataTable id="table" value="#{bean.model}" var="row" rows="5">
        <rich:column>
       <f:facet name="header">
                <h:outputText value="Packages" />
       </f:facet>
       <h:outputText value="#{row.first}" />
                <rich:contextMenu id="Menu1" attached="true">
              <rich:menuItem value="Edit package" action="#{bean.create}" />
              <rich:menuItem value="Delete package" action="#{bean.edit}" />
       </rich:contextMenu>
        </rich:column>
</rich:dataTable>
...
```

If the value of the *"attached"* attribute is false, component activates by JavaScript API or with assistance of **<rich:componentControl>** .

Example:

```
...
<rich:dataTable id="table" value="#{bean.model}" var="row" rows="5">
        <rich:column id="c1">
       <f:facet name="header">
                <h:outputText value="Packages" />
```

```
      </f:facet>
      <h:outputText value="#{row.first}" />
      <rich:componentControl event="oncontextmenu" attachTo="c1" for=":f:m"
 operation="Show">
              <f:param name="param" value="#{row.first}" />
      </rich:componentControl>
       </rich:column>
</rich:dataTable>
<rich:contextMenu id="Menu1" attached="false">
       <rich:menuItem value="Edit package" action="#{bean.edit}" />
       <rich:menuItem value="Delete package" action="#{bean.delete}" />
 </rich:contextMenu>
 ...
```

This is the result:

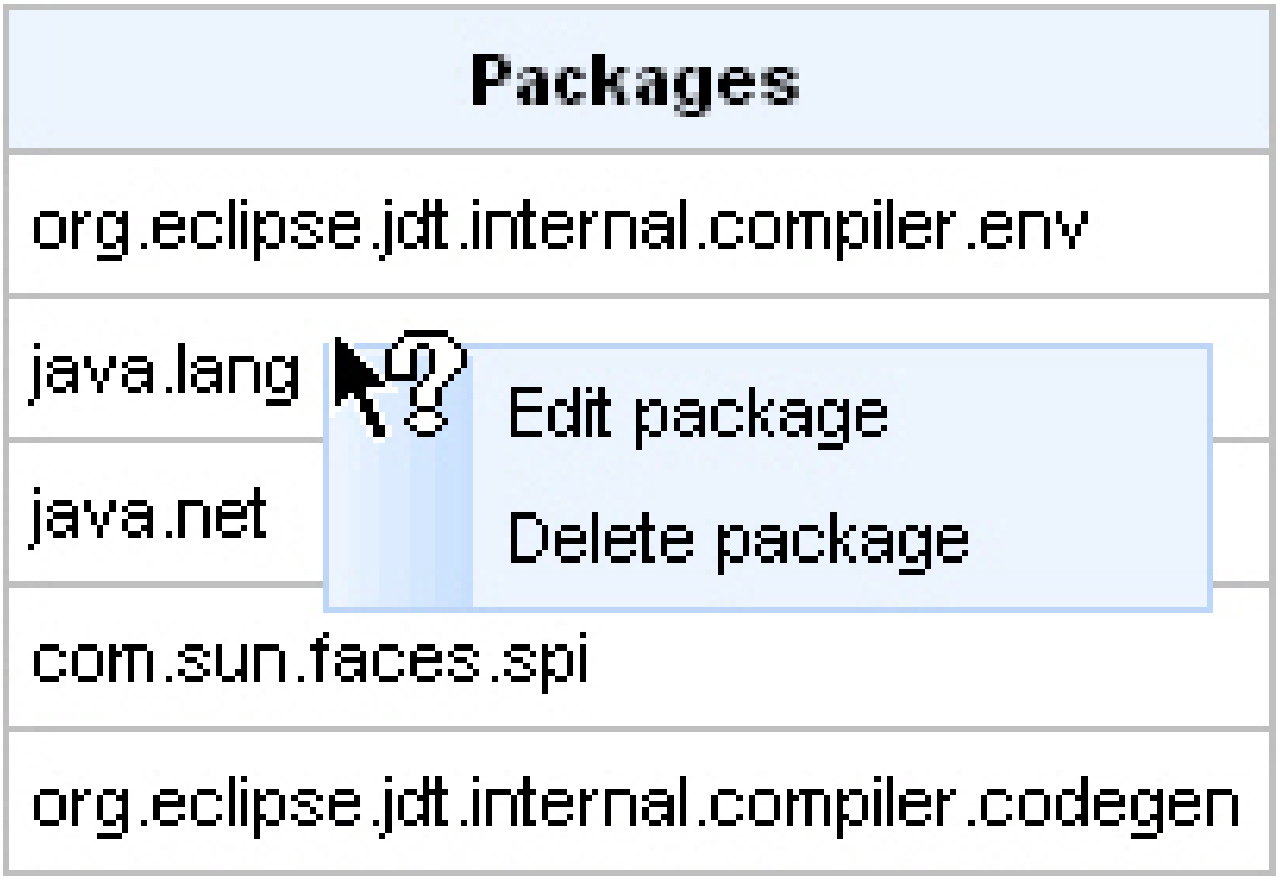


Figure 6.6. Using the *"attached"* attribute

The *"event"* attribute defines the event on the parent element that triggers the menu's appearance (oncontextmenu by default).

The **<rich:contextMenu>** *"submitMode"* attribute can be set to three possible parameters:

- Server (default)

Regular form submition request is used

- Ajax

Ajax submission is used for switching

- None

The *"action"* and *"actionListener"* item's attributes are ignored. Menu items don't fire any submits themselves. The behavior is fully defined by the components nested inside items.

> **Note:**
> As the **<rich:contextMenu>** component doesn't provide its own form, use it between <h:form> and </h:form> tags.

<rich:menuGroup> , <rich:menuItem> and <rich:menuSeparator> components is used as nested elements for **<rich:contextMenu>** .

6.26.6. JavaScript API

Table 6.66. JavaScript API

Function	Description	Apply to
Hide()	Hide component or group	Component, group
Show()	Show component or group	Component, group

6.26.7. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:contextMenu>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets style classes used by a **<rich:contextMenu>** component

6.26.8. Skin Parameters Redefinition

Table 6.67. Skin parameters redefinition for a border

Skin parameters	CSS properties
panelBorderColor	border-color
additionalBackgroundColor	background-color

Table 6.68. Skin parameters redefinition for a background

Skin parameters	CSS properties
additionalBackgroundColor	border-top-color

Skin parameters	CSS properties
additionalBackgroundColor	border-left-color
additionalBackgroundColor	border-right-color

6.26.9. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

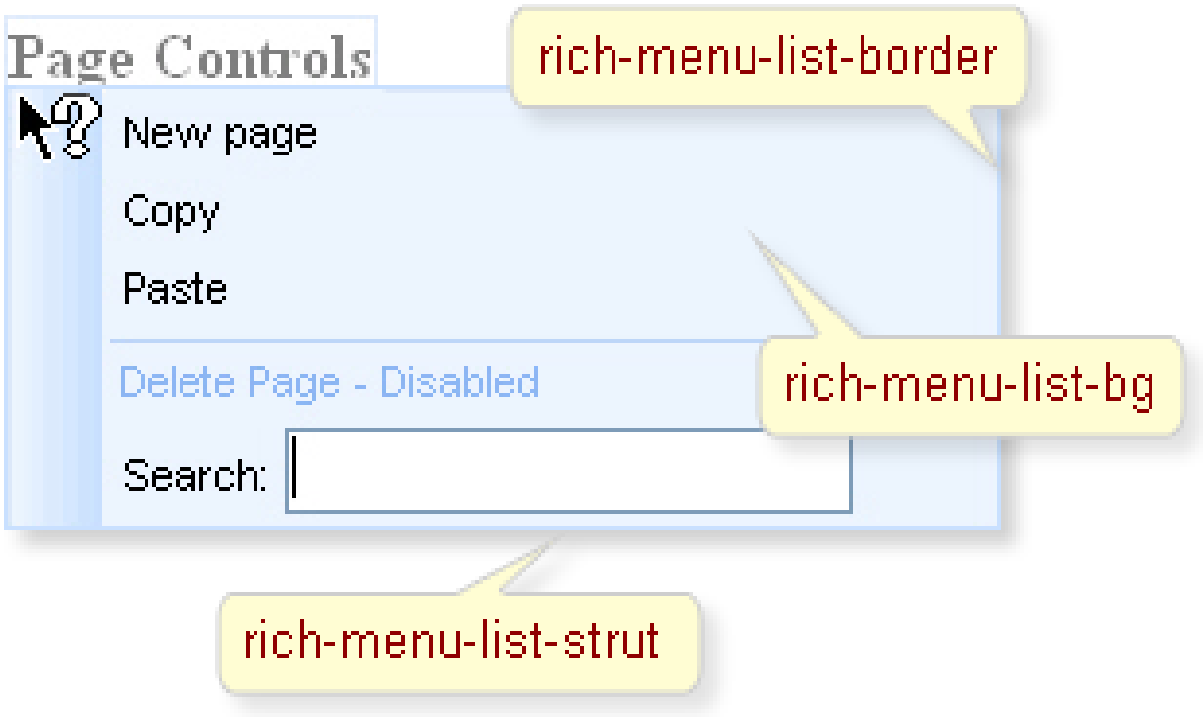


Figure 6.7. Style classes

Table 6.69. Classes names that define the contextMenu element

Class name	Description
rich-menu-list-border	Defines styles for borders
rich-menu-list-bg	Defines styles for a general background list
rich-menu-list-strut	Defines styles for a wrapper element for a strut of a popup list

In order to redefine styles for all **<rich:contextMenu>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:contextMenu>** components, define your own style classes in the corresponding **<rich:contextMenu>** component attributes.

6.26.10. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/contextMenu.jsf?c=contextMenu] you can see an example of **<rich:contextMenu>** usage and sources for the given example.

6.27. < rich:dataFilterSlider >

6.27.1. Description

A slider-based action component is used for filtering table data.

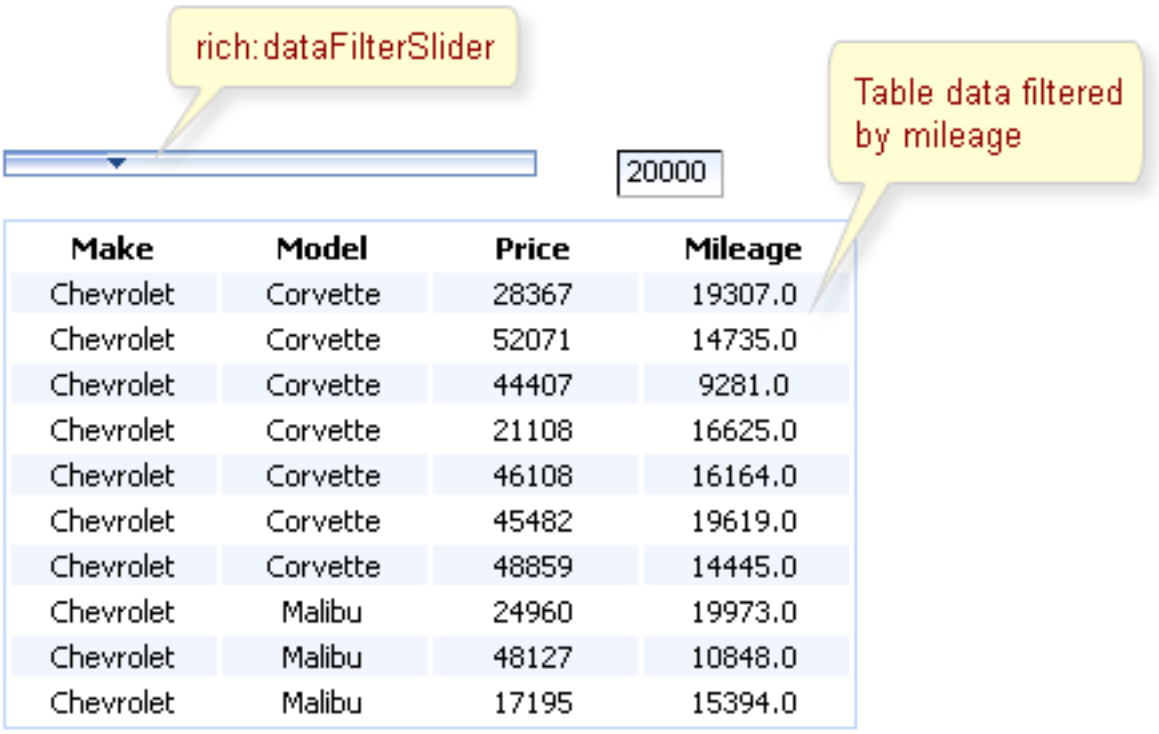


Figure 6.8. DataFilterSlider component

6.27.2. Key Features

- Filter any UIData based component in dependency on its child's values
- Fully skinnable control and input elements
- Optional value text field with an attribute-managed position
- Optional disablement of the component on a page
- Optional ToolTip to display the current value while a handle is dragged
- Dragged state is stable after the mouse moves
- Optional manual input possible if a text input field is present

- Validation of manual input

Table 6.70. rich : dataFilterSlider attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
endRange	A slider end point
fieldStyleClass	The styleClass for input that displays the value : 'manualInput' must be true
filterBy	A getter of an object member required to compare a slider value to. This is a value that is used in results filtering
for	The component using UIData (datatable id)
forValRef	This is a string which is used in a value attribute of the datatable. It is used for resetting the datatable back to the original list provided by a backing bean
handleStyleClass	The handleStyleClass for a handle
handleValue	Current handle value
id	Every component may have a unique id that is automatically created if omitted
increment	Amount to which a handle on each slide/move should be incremented
manualInput	False value for this attribute makes text field "read-only" and "hidden". Hence, the value can be changed only from a handle
onChange	If the slider value changes must submit a form, onSlide or OnChange can be true
onSlide	If the slider value changes must submit a form, onSlide or OnChange can be true
rangeStyleClass	The rangeStyleClass for the background div showing a full range
rendered	If "false", this component is not rendered
sliderListener	MethodBinding representing an action listener method that will be notified after changing of slider control position
startRange	A slider begin point

Attribute Name	Description
storeResults	Specifies if the component will store a UIData object (your table rows) in session
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	The styleClass for the container div surrounding the component
trackStyleClass	The trackStyleClass for a background div
trailer	It shows or hides a trailer following a handle
trailerStyleClass	The trailerStyleClass for a div following a handle
width	Width of the slider control

Table 6.71. Component identification parameters

Name	Value
component-type	org.richfaces.dataFilterSlider
component-class	org.richfaces.component.html.HtmlDataFilterSlider
component-family	org.richfaces.DataFilterSlider
renderer-type	org.richfaces.DataFilterSliderRenderer
tag-class	org.richfaces.taglib.dataFilterSliderTag

6.27.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:dataFilterSlider sliderListener="#{mybean.doSlide}" startRange="0"
                                            endRange="50000" increment="10000"
 handleValue="1" />
...
```

6.27.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlDataFilterSlider;
...
HtmlDataFilterSlider mySlider = new HtmlDataFilterSlider();
...
```

6.27.5. Details of Usage

The **dataFilterSlider** component is bound to some UIData component using a *"for"* attribute and filters data in a table.

Example:

```
...
    <rich:dataFilterSlider sliderListener="#{mybean.doSlide}"
                           startRange="0"
                           endRange="50000"
                           increment="10000"
                           handleValue="1"
                           for="carIndex"
                           forValRef="inventoryList.carInventory"
                           filterBy="getMileage"
    />
...
    <h:dataTable id="carIndex">
        ...
    </h:dataTable>
...
```

In this example other two attributes are used for filtering:

- *"forValRef"* is a string which is used in a value attribute of the target UIData component. It's designed for resetting the UIData component back to the original list provided by a backing bean.
- *"filterBy"* is a getter of an object member that is to be compared to a slider value. It's a value that is used in results filtering.

"handleValue" is an attribute for keeping the current handler position on the dataFilterSlider component. Based on the current value, appropriate values obtained from a getter method defined in *"filterBy"* are filtered.

One more important attribute is a *"storeResults"* one that allows the dataFilterSlider component to keep UIData target object in session.

If it's necessary the component submits a form on event of a handler state changing, use the *"onSlide"* attribute (*"onChange"* is its alias). When the attribute definition = true, submission on this event is defined.

6.27.6. Look-and-Feel Customization

The **<rich:dataFilterSlider>** component has no skin parameters and special *style classes* , as it consists of one element generated with a your method on the server. To define some style properties such as an indent or a border, it's possible to use *"style"* and *"styleClass"* attributes on the component.

6.27.7. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/dataFilterSlider.jsf?c=dataFilterSlider] you can see the example of **<rich:dataFilterSlider>** usage and sources for the given example.

6.28. < rich:datascroller >

6.28.1. Description

The component designed for providing the functionality of tables scrolling using Ajax requests.

Figure 6.9. Datascroller component

6.28.2. Key Features

- Provides table scrolling functionality
- Built-in Ajax processing
- Provides fast controls
- Skin support

Table 6.72. rich : datascroller attributes

Attribute Name	Description
action	MethodBinding pointing at the application action to be invoked, if this UIComponent is activated by the user, during the Apply Request Values or Invoke Application phase of the request processing lifecycle, depending on the value of the immediate property
actionExpression	The action method binding expression

Attribute Name	Description
actionListener	MethodBinding pointing at method accepting an ActionEvent with return type void
ajaxSingle	If "true", submits ONLY one field/link, instead of all form controls
align	left|center|right [CI] Deprecated. This attribute specifies the position of the table with respect to the document. Permitted values: * left: The table is to the left of the document. * center: The table is to the center of the document. * right: The table is to the right of the document
binding	The attribute takes a value-binding expression for a component property of a backing bean
boundaryControls	Possible values are: "show" - default mode. Controls are visible always. "hide" - controls are hidden. "auto" - unnecessary controls are hidden
bypassUpdates	If "true", after process validations phase it skips updates of model beans on a force render response. It can be used for validating components input
data	Serialized (on default with JSON) data passed on the client by a developer on AJAX request. It's accessible via "data.foo" syntax
eventsQueue	Name of requests queue to avoid send next request before complete other from same event. Can be used to reduce number of requests of frequently events (key press, mouse move etc.)
fastControls	Possible values are: "show" - default mode. Controls are visible always. "hide" - controls are hidden. "auto" - unnecessary controls are hidden
fastStep	The attribute indicates pages quantity to switch onto when fast scrolling is used
focus	id of element to set focus after request completed on client side
for	ID of the table component whose data is scrollled
handleValue	Current handle value
id	Every component may have a unique id that is automatically created if omitted

Attribute Name	Description
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response isn't actual now
immediate	A flag indicating that this component value must be converted and validated immediately (that is, during Apply Request Values phase), rather than waiting until a Process Validations phase
inactiveStyle	Corresponds to the HTML style attribute for the inactive cell on scroller
inactiveStyleClass	Corresponds to the HTML class attribute for the inactive cell on scroller
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. If "false" (default) updates all rendered by ajax region components
maxPages	Maximum quantity of pages
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
onclick	HTML: a script expression; a pointer button is clicked
oncomplete	JavaScript code for call after request completed on client side
ondblclick	HTML: a script expression; a pointer button is double-clicked
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto

Attribute Name	Description
onmouseup	HTML: script expression; a pointer button is released
pageIndexVar	Name of variable in request scope containing index of active page
pagesVar	Name of variable in request scope containing number of pages
rendered	If "false", this component is not rendered
renderIfSinglePage	If renderIfSinglePage=true then datascroller is displayed on condition that the data hold on one page
requestDelay	Attribute defines the time (in ms.) that the request will be wait in the queue before it is ready to send. When the delay time is over, the request will be sent to the server or removed if the newest 'similar' request is in a queue already
reRender	Id['s] (in format of call UIComponent.findComponent()) of components, rendered in case of AjaxRequest caused by this component. Can be single id, comma-separated list of Id's, or EL Expression with array or Collection
scrollerListener	MethodBinding representing an action listener method that will be notified after scrolling
selectedStyle	Corresponds to the HTML style attribute for the selected cell on scroller
selectedStyleClass	Corresponds to the HTML class attribute for the selected cell on scroller
status	ID (in format of call UIComponent.findComponent()) of Request status component
stepControls	Possible values are: "show" - default mode. Controls are visible always. "hide" - controls are hidden. "auto" - unnecessary controls are hidden
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
tableStyle	CSS style(s) is/are to be applied to outside table when this component is rendered

Attribute Name	Description
tableStyleClass	Space-separated list of CSS style class(es) that are be applied to outside table of this component
timeout	Response waiting time on a particular request. If a response is not received during this time, the request is aborted
value	The current value for this component

Table 6.73. Component identification parameters

Name	Value
component-type	org.richfaces.Datascroller
component-class	org.richfaces.component.html.HtmlDatascroller
component-family	org.richfaces.Datascroller
renderer-type	org.richfaces.DataScrollerRenderer
tag-class	org.richfaces.taglib.DatascrollerTag

6.28.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <h:dataTable id="table">
        ...
    </h:dataTable>
    ...
    <rich:datascroller for="table"/>
...
```

6.28.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlDatascroller;
...
HtmlDatascroller myScroll = new HtmlDatascroller();
...
```

6.28.5. Details of Usage

The **<rich:Datascroller>** component provides table scrolling functionalitity the same as TOMAHAWK scroller but with Ajax requests usage.

The component should be placed into footer of the parent table or be bound to it with the *"for"* attribute.

The table should also have the defined *"rows"* attribute limiting the quantity of inputted table rows.

The scroller could limit the maximum quantity of rendered links on the table pages with the help of the *"maxPages"* attribute.

Component provides two controllers groups for switching:

- Page numbers for switching onto a particular page
- The controls of fast switching: *"first"*, *"last"*, *"next"*, *"previous"*, *"fastforward"*, *"fastrewind"*

The controls of fast switching are created adding the facets component with the corresponding name:

Example:

```
...
   <rich:datascroller for="table" maxPages="10">
       <f:facet name="first">
           <h:outputText value="First"/>
       </f:facet>
       <f:facet name="last">
           <h:outputText value="Last"/>
       </f:facet>
   </rich:datascroller>
...
```

Figure 6.10. Datascroller controls

The screenshot shows one controller from each group.

There are also facets used to create the disabled states: *"first_disabled"*, *"last_disabled"*, *"next_disabled"*, *"previous_disabled"*, *"fastforward_disabled"*, *"fastrewind_disabled"* .

For the *"fastforward"/"fastrewind"* controls customization the additional *"fastStep"* attribute is used. The attribute indicates pages quantity to switch onto when fast scrolling is used.

The *"pageIndexVar"* and *"pagesVar"* attributes provide an ability to show the current page and the number of pages in the dataScroller. These attributes are used for definition the names of variables, that will be used in the facet with name *"pages"*. An example can be found below:

Example:

```
...
     <h:form>
           <rich:dataTable value="#{capitalsBean.capitals}" var="cap" rows="5">
                 <rich:column>
                        <h:outputText value="#{cap.name}"></h:outputText>
                 </rich:column>
                 <f:facet name="footer">
                       <rich:datascroller pageIndexVar="pageIndex" pagesVar="pages">
                              <f:facet name="pages">
                                    <h:outputText value="#{pageIndex} /
#{pages}"></h:outputText>
                              </f:facet>
                       </rich:datascroller>
                 </f:facet>
           </rich:dataTable>
     </h:form>
...
```

It's possible to insert optional separators between controls. For this purpose use a *"controlSeparator"* facet. An example is placed below.

```
...
     <f:facet name="controlSeparator">
           <h:graphicImage value="/image/sep.gif"/>
     </f:facet>
...
```

6.28.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:datascroller>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:datascroller>** component

6.28.7. Skin Parameters Redefinition

Table 6.74. Skin parameters redefinition for a wrapper element

Skin parameters	CSS properties
tableBackgroundColor	background-color
panelBorderColor	border-color

Table 6.75. Skin parameters redefinition for a button

Skin parameters	CSS properties
additionalBackgroundColor	background-color
panelBorderColor	border-color
generalFamilyFont	font-family
generalSizeFont	font-size

Table 6.76. Skin parameters redefinition for an active button

Skin parameters	CSS properties
generalTextColor	border-top-color
generalTextColor	color
generalFamilyFont	font-family
generalSizeFont	font-size

Table 6.77. Skin parameters redefinition for an inactive button

Skin parameters	CSS properties
headerBackgroundColor	border-top-color
headerBackgroundColor	color
generalFamilyFont	font-family
generalSizeFont	font-size

6.28.8. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

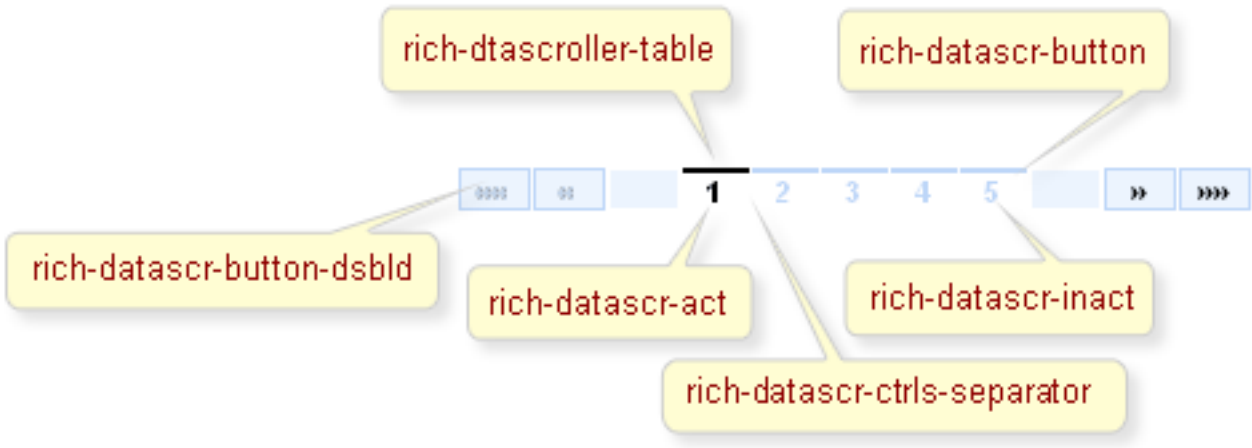


Figure 6.11. Style classes

Table 6.78. Classes names that define a component appearance

Class name	Description
rich-datascr	Defines styles for a wrapper element of a datascroller
rich-dtascroller-table	Defines styles for a wrapper table element of a datascroller
rich-datascr-button	Defines styles for a button
rich-datascr-ctrls-separator	Defines styles for a separator between buttons

Table 6.79. Classes names that define a buttons appearance

Class name	Description
rich-datascr-act	Defines styles for an active button
rich-datascr-inact	Defines styles for an inactive button
rich-datascr-button-dsbld	Defines styles for a disabled button

In order to redefine styles for all **<rich:datascroller>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:datascroller>** components, define your own style classes in the corresponding **<rich:datascroller>** attributes.

6.28.9. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/dataTableScroller.jsf?c=dataTableScroller] you can see the example of **<rich:dataScroller>** usage and sources for the given example.

The solution about how to do correct pagination using datascroller (load a part of data from database) can be found on the RichFaces Users Forum [http://www.jboss.com/index.html?module=bb&op=viewtopic&p=4060199#4060199].

How to use **<rich:dataTable>** and **<rich:dataScroller>** in a context of Extended Data Model see here [http://www.jboss.com/index.html?module=bb&op=viewtopic&t=115636].

6.29. < rich:subTable >

6.29.1. Description

The component is used for inserting subtables into tables with opportunity to choose data from a model and built-in Ajax updates support.

Figure 6.12. SubTable element

6.29.2. Key Features

- Completely skinned table rows and child elements
- Possibility to insert complex columnGroup subcomponents
- Possibility to combine rows and columns inside

- Possibility to update a limited set of rows with AJAX

Table 6.80. rich : subTable attributes

Attribute Name	Description
ajaxKeys	This attribute defines rows that are updated after an AJAX request
binding	The attribute takes a value-binding expression for a component property of a backing bean
columnClasses	Comma-delimited list of CSS style classes that are be applied to the columns of this table. A space separated list of classes may also be specified for any individual column. If the number of elements in this list is less than the number of columns specified in the "columns" attribute, no "class" attribute is output for each column greater than the number of elements in the list. If the number of elements in the list is greater than the number of columns specified in the "columns" attribute, the elements at the position in the list after the value of the "columns" attribute are ignored
componentState	It defines EL-binding for a component state for saving or redefinition
first	A zero-relative row number of the first row to display
footerClass	Space-separated list of CSS style class(es) that are be applied to any footer generated for this table
headerClass	Space-separated list of CSS style class(es) that are be applied to any header generated for this table
id	Every component may have a unique id that is automatically created if omitted
onRowClick	HTML: a script expression; a pointer button is clicked on row
onRowDblClick	HTML: a script expression; a pointer button is double-clicked on row
onRowMouseDown	HTML: script expression; a pointer button is pressed down on row
onRowMouseMove	HTML: a script expression; a pointer is moved within of row
onRowMouseOut	HTML: a script expression; a pointer is moved away of row

Attribute Name	Description
onRowMouseOver	HTML: a script expression; a pointer is moved onto of row
onRowMouseUp	HTML: script expression; a pointer button is released on row
rendered	If "false", this component is not rendered
rowClasses	A comma-delimited list of CSS style classes that is applied to popup table rows. A space separated list of classes may also be specified for any individual row. The styles are applied, in turn, to each row in the table. For example, if the list has two elements, the first style class in the list is applied to the first row, the second to the second row, the first to the third row, the second to the fourth row, etc. In other words, we keep iterating through the list until we reach the end, and then we start at the beginning again
rowKey	RowKey is a representation of an identifier for a specific data row
rowKeyVar	The attribute provides access to a row key in a Request scope
rows	A number of rows to display, or zero for all remaining rows in the table
sortExpression	sortExpression
stateVar	The attribute provides access to a component state on the client side
value	The current value for this component
var	A request-scope attribute via which the data object for the current row will be used when iterating

Table 6.81. Component identification parameters

Name	Value
component-type	org.richfaces.SubTable
component-class	org.richfaces.component.html.HtmlSubTable
component-family	org.richfaces.SubTable
renderer-type	org.richfaces.SubTableRenderer
tag-class	org.richfaces.taglib.SubTableTag

6.29.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
     <rich:dataTable value="#{capitalsBean.capitals}" var="capitals">
        <rich:column>
            ...
        </rich:column>
        <rich:subTable value=#{capitals.details} var="detail">
            <rich:column>
                ...
            </rich:column>
        </rich:subTable>
    </rich:dataTable>
...
```

6.29.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlSubTable;
...
HtmlSubTable mySubTable = new HtmlSubTable();
...
```

6.29.5. Details of Usage

The **<rich:subTable>** component is similar to the **<h:dataTable>** one, except Ajax support and skinnability. One more difference is that the component doesn't add the wrapping **<table>** and **<tbody>** tags. Ajax support is possible, because the component was created basing on the **<a4j:repeat>** component and as a result it could be partially updated with Ajax. *"ajaxKeys"* attribute allows to define rows that is updated after an Ajax request.

Here is an example:

Example:

```
...
    <rich:dataTable value="#{capitalsBean.capitals}" var="capitals">
        <rich:column>
            ...
        </rich:column>
        <rich:subTable value="#{capitals.details}" var="detail"
 ajaxKeys="#{bean.ajaxSet}" binding="#{bean.subtable}" id="subtable">
            <rich:column>
                ...
            </rich:column>
        </rich:subTable>
    </rich:dataTable>
...
    <a4j:commandButton action="#{tableBean.action}" reRender="subtable"/>
```

```
. . .
```

In the example *"reRender"* attribute contains value of *"id"* attribute for **<rich:subTable>** component. As a result the component is updated after an Ajax request.

The component allows to use *"header"* and *"footer"* facets for output. See an example for **<rich:dataTable>** component [184].

6.29.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:subTable>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:subTable>** component

6.29.7. Skin Parameters Redefinition

Skin parameters redefinition for **<rich:subTable>** are the same as for the **<rich:dataTable>** component.

6.29.8. Definition of Custom Style Classes

Table 6.82. Classes names that define a component appearance

Class name	Description
rich-subtable	Defines styles for all subtable
rich-subtable-caption	Defines styles for a "caption" facet element

Table 6.83. Classes names that define header and footer elements

Class name	Description
rich-subtable-header	Defines styles for a subtable header row
rich-subtable-header-continue	Defines styles for all subtable header lines after the first
rich-subtable-subheader	Defines styles for a column header of subtable
rich-subtable-subfooter	Defines styles for a column footer of subtable
rich-subtable-footer	Defines styles for a subtable footer row
rich-subtable-footer-continue	Defines styles for all subtable footer lines after the first

Table 6.84. Classes names that define rows and cells

Class name	Description
rich-subtable-headercell	Defines styles for a subtable header cell

Class name	Description
rich-subtable-subheadercell	Defines styles for a column header cell of subtable
rich-subtable-cell	Defines styles for a subtable cell
rich-subtable-row	Defines styles for a subtable row
rich-subtable-firstrow	Defines styles for a subtable start row
rich-subtable-subfootercell	Defines styles for a column footer cell of subtable
rich-subtable-footercell	Defines styles for a subtable footer cell

In order to redefine styles for all **<rich:subTable>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:subTable>** components, define your own style classes in the corresponding **<rich:subTable>** attributes.

6.30. < rich:column >

6.30.1. Description

The component for row rendering for a UIData component.

United States Capitals

Capitals and States Table			
State Flag	Capital Name	State Name	TimeZone
	Montgomery	Alabama	GMT-6
	Juneau	Alaska	GMT-9
	Phoenix	Arizona	GMT-7
	Little Rock	Arkansas	GMT-6
	Sacramento	California	GMT-8
State Flag	Capital Name	State Name	TimeZone
Capitals and States Table			

Figure 6.13. Column component

6.30.2. Key Features

- Completely skinned table rows and child elements

- Possibility to combine columns with the help of *"colspan"*
- Possibility to combine rows with the help of *"rowspan"* and *"breakBefore"*

Table 6.85. rich : column attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
breakBefore	if "true" next column begins from the first row
colspan	Corresponds to the HTML colspan attribute
dir	Direction indication for text that does not inherit directionality. Valid values are "LTR" (left-to-right) and "RTL" (right-to-left)
footerClass	Space-separated list of CSS style class(es) that are be applied to any footer generated for this table
headerClass	Space-separated list of CSS style class(es) that are be applied to any header generated for this table
id	Every component may have a unique id that is automatically created if omitted
lang	Code describing the language used in the generated markup for this component
rendered	If "false", this component is not rendered
rowspan	Corresponds to the HTML rowspan attribute
sortable	Boolean attribute. If "true" it's possible to sort the column content after click on the header. Default value is "true"
sortExpression	Attribute defines a bean property which is used for sorting of a column
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
title	Advisory title information about markup elements generated for this component
width	Attribute defines width of column. Default value is "100px".

Table 6.86. Component identification parameters

Name	Value
component-type	org.richfaces.Column
component-class	org.richfaces.component.html.HtmlColumn
component-family	org.richfaces.Column
renderer-type	org.richfaces.ColumnRenderer
tag-class	org.richfaces.taglib.ColumnTag

6.30.3. Creating the Component with a Page Tag

To create the simplest variant of column on a page, use the following syntax:

Example:

```
...
    <rich:dataTable var="set">
        <rich:column>
            <h:outputText value="#{set.property1}"/>
        </rich:column>
        <!--Set of another columns and header/footer facets-->
    </rich:dataTable>
...
```

6.30.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlColumn;
...
HtmlColumn myColumn = new HtmlColumn();
...
```

6.30.5. Details of Usage

To output a simple table, the **<rich:column>** component is used the same way as the standard **<h:column>** , i.e. the following code on a page is used:

Example:

```
...
    <rich:dataTable value="#{capitalsBean.capitals}" var="cap" rows="5">
        <rich:column>
            <f:facet name="header">State Flag</f:facet>
            <h:graphicImage value="#{cap.stateFlag}"/>
        </rich:column>
        <rich:column>
            <f:facet name="header">State Name</f:facet>
            <h:outputText value="#{cap.state}"/>
```

```
        </rich:column>
        <rich:column >
            <f:facet name="header">State Capital</f:facet>
            <h:outputText value="#{cap.name}"/>
        </rich:column>
        <rich:column>
        <f:facet name="header">Time Zone</f:facet>
            <h:outputText value="#{cap.timeZone}"/>
        </rich:column>
    </rich:dataTable>
...
```

The result is:

State Flag	State Name	State Capital	Time Zone
	Alabama	Montgomery	GMT-6
	Alaska	Juneau	GMT-9
	Arizona	Phoenix	GMT-7
	Arkansas	Little Rock	GMT-6
	California	Sacramento	GMT-8

Figure 6.14. Generated column component

Now, in order to group columns with text information into one row in one column with a flag, use the *"colspan"* attribute, which is similar to an HTML one, specifying that the first column contains 3 columns. In addition, it's necessary to specify that the next column begins from the first row with the help of the *"breakBefore"* attribute = true.

Example:

```
...
     <rich:dataTable value="#{capitalsBean.capitals}" var="cap" rows="5">
        <rich:column colspan="3">
            <h:graphicImage value="#{cap.stateFlag}"/>
        </rich:column>
        <rich:column breakBefore="true">
            <h:outputText value="#{cap.state}"/>
        </rich:column>
        <rich:column >
            <h:outputText value="#{cap.name}"/>
        </rich:column>
        <rich:column>
            <h:outputText value="#{cap.timeZone}"/>
        </rich:column>
```

```
    </rich:dataTable>
...
```

As a result the following structure is rendered:

Figure 6.15. Column modified with colspan and breakbefore attributes

The same way is used for columns grouping with the *"rowspan"* attribute that is similar to an HTML one responsible for rows quantity definition occupied with the current one. The only thing to add in the example is an instruction to move onto the next row for each next after the second column.

Example:

```
...
    <rich:dataTable value="#{capitalsBean.capitals}" var="cap" rows="5">
        <rich:column rowspan="3">
            <f:facet name="header">State Flag</f:facet>
            <h:graphicImage value="#{cap.stateFlag}"/>
        </rich:column>
        <rich:column>
            <f:facet name="header">State Info</f:facet>
            <h:outputText value="#{cap.state}"/>
        </rich:column>
        <rich:column breakBefore="true">
            <h:outputText value="#{cap.name}"/>
        </rich:column>
        <rich:column breakBefore="true">
            <h:outputText value="#{cap.timeZone}"/>
        </rich:column>
    </rich:dataTable>
```

```
. . .
```

As a result:

State Flag	State Info
	Alabama
	Montgomery
	GMT-6
	Alaska
	Juneau
	GMT-9
	Arizona
	Phoenix
	GMT-7
	Arkansas
	Little Rock
	GMT-6
	California
	Sacramento
	GMT-8

Figure 6.16. Column generated with rowspan attribute

Hence, additionally to a standard output of a particular row provided with the **<h:column>** component, it becomes possible to group easily the rows with special HTML attribute.

The columns also could be grouped in a particular way with the help of the **<h:columnGroup>** component that is described in the following chapter.

6.30.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:column>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:column>** component

6.30.7. Skin Parameters Redefinition

Skin parameters redefinition for **<rich:column>** are the same as for the **<rich:dataTable>** component.

6.30.8. Definition of Custom Style Classes

Custom style classes for **<rich:column>** are the same as for the **<rich:dataTable>** component.

In order to redefine styles for all **<rich:column>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:column>** components, define your own style classes in the corresponding **<rich:column>** attributes.

6.30.9. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/dataTable.jsf?c=column] you can see the example of **<rich:column>** usage and sources for the given example.

6.31. < rich:dataList >

6.31.1. Description

The component for unordered lists rendering that allows choosing data from a model and obtains built-in support of Ajax updates.

- Chevrolet Corvette
  Price:41753
  Mileage:10419.0
- Chevrolet Corvette
  Price:17540
  Mileage:45531.0
- Chevrolet Corvette
  Price:20191
  Mileage:5927.0
- Chevrolet Corvette
  Price:46960
  Mileage:13937.0
- Chevrolet Corvette
  Price:34164
  Mileage:72236.0

Figure 6.17. dataList component

6.31.2. Key Features

- A completely skinned list and child elements

- Possibility to update a limited set of rows with AJAX
- Possibility to receive values dynamically from a model

Table 6.87. rich : dataList attributes

Attribute Name	Description
ajaxKeys	This attribute defines rows that are updated after an AJAX request
binding	The attribute takes a value-binding expression for a component property of a backing bean
columnClasses	Comma-delimited list of CSS style classes that are be applied to the columns of this table. A space separated list of classes may also be specified for any individual column. If the number of elements in this list is less than the number of columns specified in the "columns" attribute, no "class" attribute is output for each column greater than the number of elements in the list. If the number of elements in the list is greater than the number of columns specified in the "columns" attribute, the elements at the position in the list after the value of the "columns" attribute are ignored
componentState	It defines EL-binding for a component state for saving or redefinition
dir	Direction indication for text that does not inherit directionality. Valid values are "LTR" (left-to-right) and "RTL" (right-to-left)
first	A zero-relative row number of the first row to display
footerClass	Space-separated list of CSS style class(es) that are be applied to any footer generated for this table
headerClass	Space-separated list of CSS style class(es) that are be applied to any header generated for this table
id	Every component may have a unique id that is automatically created if omitted
lang	Code describing the language used in the generated markup for this component
rendered	If "false", this component is not rendered
rowClasses	A comma-delimited list of CSS style classes that is applied to popup table rows. A space separated list of classes may also be specified for any individual row.

Attribute Name	Description
	The styles are applied, in turn, to each row in the table. For example, if the list has two elements, the first style class in the list is applied to the first row, the second to the second row, the first to the third row, the second to the fourth row, etc. In other words, we keep iterating through the list until we reach the end, and then we start at the beginning again
rowKey	RowKey is a representation of an identifier for a specific data row
rowKeyVar	The attribute provides access to a row key in a Request scope
rows	A number of rows to display, or zero for all remaining rows in the table
stateVar	The attribute provides access to a component state on the client side
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
title	Advisory title information about markup elements generated for this component
type	Corresponds to the HTML DL type attribute
value	The current value for this component
var	A request-scope attribute via which the data object for the current row will be used when iterating

Table 6.88. Component identification parameters

Name	Value
component-type	org.richfaces.DataList
component-class	org.richfaces.component.html.HtmlDataList
component-family	org.richfaces.DataList
renderer-type	org.richfaces.DataListRenderer
tag-class	org.richfaces.taglib.DataListTag

6.31.3. Creating the Component with a Page Tag

To create the simplest variant of dataList on a page, use the following syntax:

Example:

```
...
    <rich:dataList var="car" value="#{dataTableScrollerBean.allCars}" >
        <h:outputText value="#{car.model}"/>
    </rich:dataList>
...
```

6.31.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlDataList;
...
HtmlDataList myList = new HtmlDataList();
...
```

6.31.5. Details of Usage

The **<rich:dataList>** component allows to generate a list from a model.

The component has the *"type"* attribute, which corresponds to the *"type"* parameter for the *"UL"* HTML element and defines a marker type. Possible values for *"type"* attribute are: "disc", "circle", "square".

Here is an example:

```
...
    <h:form>
        <rich:dataList var="car" value="#{dataTableScrollerBean.allCars}" rows="5"
 type="disc" title="Car Store">
            <h:outputText value="#{car.make} #{car.model}"/><br/>
            <h:outputText value="Price:" styleClass="label"></h:outputText>
            <h:outputText value="#{car.price} "/><br/>
            <h:outputText value="Mileage:" styleClass="label"></h:outputText>
            <h:outputText value="#{car.mileage} "/><br/>
        </rich:dataList>
</h:form>
...
```

This is a result:

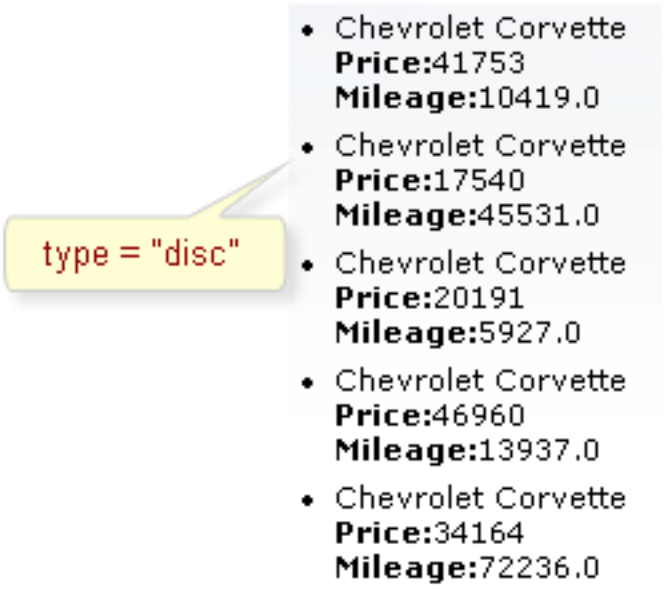


Figure 6.18. Component usage

In the example the *"rows"* attribute limits number of output elements of the list.

"first" attribute defines first element for output. *"title"* are used for popup title. See picture below:

Figure 6.19. Component usage

The component was created basing on the **<a4j:repeat>** component and as a result it could be partially updated with Ajax. *"ajaxKeys"* attribute allows to define rows that are updated after an Ajax request.

Here is an example:

Example:

```
...
    <rich:dataList value="#{dataTableScrollerBean.allCars}" var="car"
 ajaxKeys="#{listBean.list}"
                       binding="#{listBean.dataList}" id="list" rows="5"
 type="disc">
        ...
    </rich:dataList>
...
    <a4j:commandButton action"#{listBean.action}" reRender="list" value="Submit"/>
...
```

In the example *"reRender"* attribute contains value of *"id"* attribute for **<rich:dataList>** component. As a result the component is updated after an Ajax request.

6.31.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:dataList>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:dataList>** component

6.31.7. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

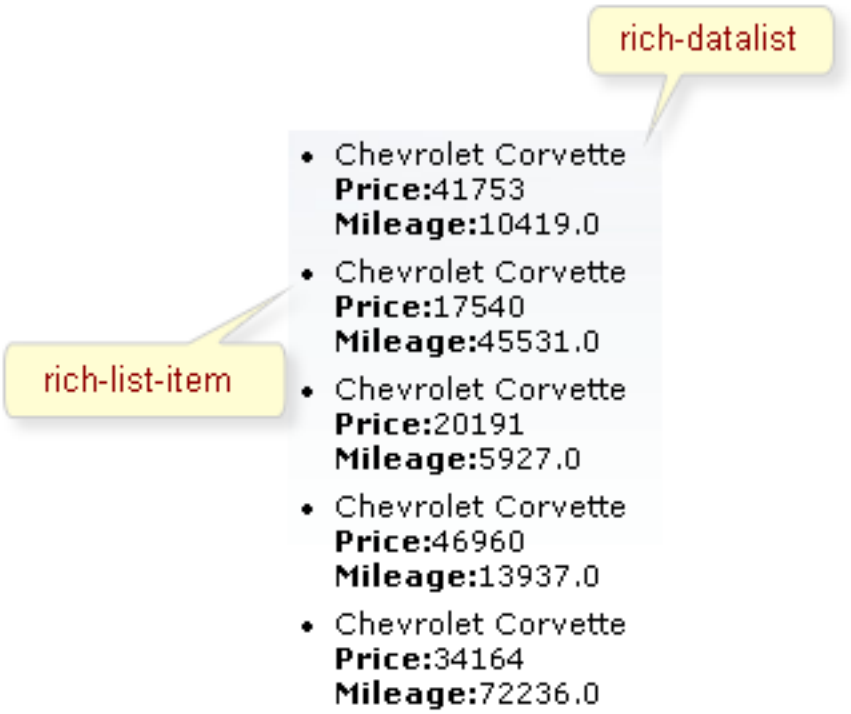


Figure 6.20. Style classes

Table 6.89. Classes names that define a list appearance

Class name	Description
rich-datalist	Defines styles for an html element
rich-list-item	Defines styles for an html element

In order to redefine styles for all **<rich:dataList>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:dataList>** components, define your own style classes in the corresponding **<rich:dataList>** attributes.

6.31.8. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/dataLists.jsf?c=dataList] you can see the example of **<rich:dataList>** usage and sources for the given example.

6.32. < rich:dataOrderedList >

6.32.1. Description

The component for ordered lists rendering that allows choosing data from a model and obtains built-in support of Ajax updates.

Figure 6.21. DataOrderedList component

6.32.2. Key Features

- A completely skinned list and child elements
- Possibility to update a limited set of rows with AJAX
- Possibility to receive values dynamically from a model

Table 6.90. rich : dataOrderedList attributes

Attribute Name	Description
ajaxKeys	This attribute defines rows that are updated after an AJAX request
binding	The attribute takes a value-binding expression for a component property of a backing bean
columnClasses	Comma-delimited list of CSS style classes that are be applied to the columns of this table. A space separated list of classes may also be specified for any individual column. If the number of elements in this list is less than the number of columns specified in the "columns" attribute, no "class" attribute is output for each column greater than the number of elements in the list. If the number of elements in the list is greater than the number of columns specified in the "columns" attribute, the elements at the position in the list after the value of the "columns" attribute are ignored

Attribute Name	Description
componentState	It defines EL-binding for a component state for saving or redefinition
dir	Direction indication for text that does not inherit directionality. Valid values are "LTR" (left-to-right) and "RTL" (right-to-left)
first	A zero-relative row number of the first row to display
footerClass	Space-separated list of CSS style class(es) that are be applied to any footer generated for this table
headerClass	Space-separated list of CSS style class(es) that are be applied to any header generated for this table
id	Every component may have a unique id that is automatically created if omitted
lang	Code describing the language used in the generated markup for this component
rendered	If "false", this component is not rendered
rowClasses	A comma-delimited list of CSS style classes that is applied to popup table rows. A space separated list of classes may also be specified for any individual row. The styles are applied, in turn, to each row in the table. For example, if the list has two elements, the first style class in the list is applied to the first row, the second to the second row, the first to the third row, the second to the fourth row, etc. In other words, we keep iterating through the list until we reach the end, and then we start at the beginning again
rowKey	RowKey is a representation of an identifier for a specific data row
rowKeyVar	The attribute provides access to a row key in a Request scope
rows	A number of rows to display, or zero for all remaining rows in the table
stateVar	The attribute provides access to a component state on the client side
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute

Attribute Name	Description
title	Advisory title information about markup elements generated for this component
type	Corresponds to the HTML OL type attribute
value	The current value for this component
var	A request-scope attribute via which the data object for the current row will be used when iterating

Table 6.91. Component identification parameters

Name	Value
component-type	org.richfaces.DataOrderedList
component-class	org.richfaces.component.html.HtmlDataOrderedList
component-family	org.richfaces.DataOrderedList
renderer-type	org.richfaces.DataOrderedListRenderer
tag-class	org.richfaces.taglib.DataOrderedListTag

6.32.3. Creating the Component with a Page Tag

To create the simplest variant of dataOrderedList on a page, use the following syntax:

Example:

```
...
    <rich:dataOrderedList var="car" value="#{dataTableScrollerBean.allCars}" >
        <h:outputText value="#{car.model}"/>
    </rich:dataOrderedList>
...
```

6.32.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlDataOrderedList;
...
HtmlDataOrderedList myList = new HtmlDataOrderedList();
...
```

6.32.5. Details of Usage

The **<rich:dataOrderedList>** component allows to generate an ordered list from a model.

The component has the *"type"* attribute, which corresponds to the *"type"* parameter for the *"OL"* HTML element and defines a marker type. Possible values for *"type"* attribute are: "A", "a", "I", "i","1".

Here is an example:

```
...
    <h:form>
        <rich:dataOrderedList var="car" value="#{dataTableScrollerBean.allCars}"
 rows="5" type="1"  title="Car Store">
            <h:outputText value="#{car.make} #{car.model}"/><br/>
            <h:outputText value="Price:" styleClass="label"></h:outputText>
            <h:outputText value="#{car.price} " /><br/>
            <h:outputText value="Mileage:" styleClass="label"></h:outputText>
            <h:outputText value="#{car.mileage} " /><br/>
        </rich:dataOrderedList>
    </h:form>
...
```

This is a result:

Figure 6.22. Component usage

In the example the *"rows"* attribute limits number of output elements of the list.

"first" attribute defines first element for output. *"title"* are used for popup title.

The component was created basing on the **<a4j:repeat>** component and as a result it could be partially updated with Ajax. *"ajaxKeys"* attribute allows to define rows that are updated after an Ajax request.

Here is an example:

Example:

```
...
    <rich:dataOrderedList value="#{dataTableScrollerBean.allCars}" var="car"
 ajaxKeys="#{listBean.list}"
                        binding="#{listBean.dataList}" id="list">
        ...
    </rich:dataOrderedList>
...
    <a4j:commandButton action"#{listBean.action}" reRender="list" value="Submit"/>
...
```

In the example *"reRender"* attribute contains value of *"id"* attribute for **<rich:dataOrderedList>** component. As a result the component is updated after an Ajax request.

6.32.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:dataOrderedList>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:dataOrderedList>** component

6.32.7. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

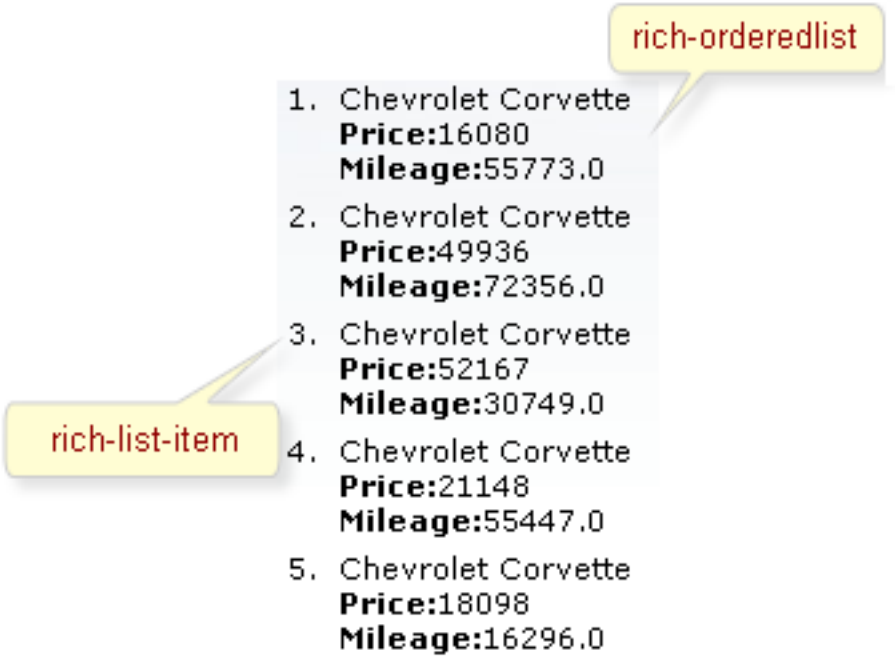


Figure 6.23. Style classes

Table 6.92. Classes names that define a list appearance

Class name	Description
rich-orderedlist	Defines styles for an html element
rich-list-item	Defines styles for an html element

In order to redefine styles for all **<rich:dataOrderedList>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:dataOrderedList>** components, define your own style classes in the corresponding **<rich:dataOrderedList>** attributes.

6.32.8. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/dataLists.jsf?c=dataOrderedList] you can see the example of **<rich:dataOrderedList >** usage and sources for the given example.

6.33. < rich:dataDefinitionList >

6.33.1. Description

The component for definition lists rendering that allows choosing data from a model and obtains built-in support of Ajax updates.

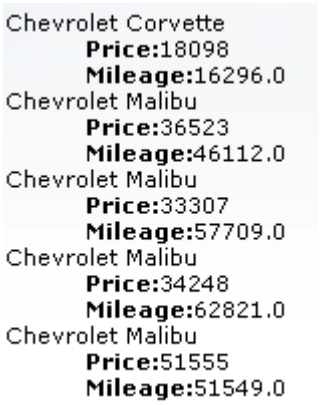


Figure 6.24. DataDefinitionList component

6.33.2. Key Features

- Completely skinned table rows and child elements
- Possibility to update a limited set of rows with AJAX
- Possibility to receive values dynamically from a model

Table 6.93. rich : dataDefinitionList attributes

Attribute Name	Description
ajaxKeys	This attribute defines rows that are updated after an AJAX request
binding	The attribute takes a value-binding expression for a component property of a backing bean
columnClasses	Comma-delimited list of CSS style classes that are be applied to the columns of this table. A space separated list of classes may also be specified for any individual column. If the number of elements in this list is less than the number of columns specified in the "columns" attribute, no "class" attribute is output for each column greater than the number of elements in the list. If

Attribute Name	Description
	the number of elements in the list is greater than the number of columns specified in the "columns" attribute, the elements at the position in the list after the value of the "columns" attribute are ignored
componentState	It defines EL-binding for a component state for saving or redefinition
dir	Direction indication for text that does not inherit directionality. Valid values are "LTR" (left-to-right) and "RTL" (right-to-left)
first	A zero-relative row number of the first row to display
footerClass	Space-separated list of CSS style class(es) that are be applied to any footer generated for this table
headerClass	Space-separated list of CSS style class(es) that are be applied to any header generated for this table
id	Every component may have a unique id that is automatically created if omitted
lang	Code describing the language used in the generated markup for this component
rendered	If "false", this component is not rendered
rowClasses	A comma-delimited list of CSS style classes that is applied to popup table rows. A space separated list of classes may also be specified for any individual row. The styles are applied, in turn, to each row in the table. For example, if the list has two elements, the first style class in the list is applied to the first row, the second to the second row, the first to the third row, the second to the fourth row, etc. In other words, we keep iterating through the list until we reach the end, and then we start at the beginning again
rowKey	RowKey is a representation of an identifier for a specific data row
rowKeyVar	The attribute provides access to a row key in a Request scope
rows	A number of rows to display, or zero for all remaining rows in the table
stateVar	The attribute provides access to a component state on the client side

Attribute Name	Description
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
title	Advisory title information about markup elements generated for this component
value	The current value for this component
var	A request-scope attribute via which the data object for the current row will be used when iterating

Table 6.94. Component identification parameters

Name	Value
component-type	org.richfaces.DataDefinitionList
component-class	org.richfaces.component.html.HtmlDataDefinitionList
component-family	org.richfaces.DataDefinitionList
renderer-type	org.richfaces.DataDefinitionListRenderer
tag-class	org.richfaces.taglib.DataDefinitionListTag

6.33.3. Creating the Component with a Page Tag

To create the simplest variant of dataDefinitionList on a page, use the following syntax:

Example:

```
...
    <rich:dataDefinitionList value="#{bean.capitals}" var="caps">
        <f:facet name="term">Cars</f:facet>
        <h:outputText value="#{car.model}"/>
    </rich:dataDefinitionList>
...
```

6.33.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlDataDefinitionList;
...
HtmlDataDefinitionList myList = new HtmlDataDefinitionList();
...
```

6.33.5. Details of Usage

The **<rich:dataDefinitionList>** component allows to generate an definition list from a model.

The component has the *"term"* facet, which corresponds to the *"type"* parameter for the *"DT"* HTML element.

Here is an example:

```
...
    <h:form>
        <rich:dataDefinitionList var="car" value="#{dataTableScrollerBean.allCars}"
 rows="5" first="4" title="Cars">
            <f:facet name="term">
                <h:outputText value="#{car.make} #{car.model}"></h:outputText>
            </f:facet>
            <h:outputText value="Price:" styleClass="label"></h:outputText>
            <h:outputText value="#{car.price} " /><br/>
            <h:outputText value="Mileage:" styleClass="label"></h:outputText>
            <h:outputText value="#{car.mileage} " /><br/>
        </rich:dataDefinitionList>
    </h:form>
...
```

This is a result:

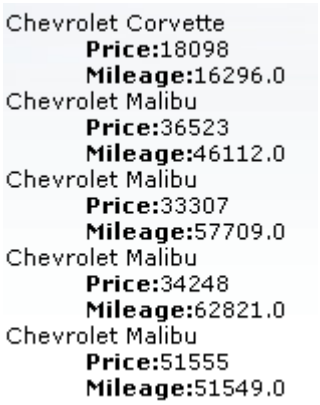


Figure 6.25. Component usage

In the example the *"rows"* attribute limits number of output elements of the list.

"first" attribute defines first element for output. *"title"* are used for popup title.

The component was created basing on the **<a4j:repeat>** component and as a result it could be partially updated with Ajax. *"ajaxKeys"* attribute allows to define rows that are updated after an Ajax request.

Here is an example:

Example:

```
...
    <rich:dataDefinitionList value="#{dataTableScrollerBean.allCars}" var="car"
 ajaxKeys="#{listBean.list}"
                        binding="#{listBean.dataList}" id="list">
        ...
    </rich:dataDefinitionList>
...
```

```
    <a4j:commandButton action"#{listBean.action}" reRender="list" value="Submit"/>
...
```

In the example *"reRender"* attribute contains value of *"id"* attribute for **<rich:dataDefinitionList>** component. As a result the component is updated after an Ajax request.

6.33.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:dataDefinitionList>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:dataDefinitionList>** component

6.33.7. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

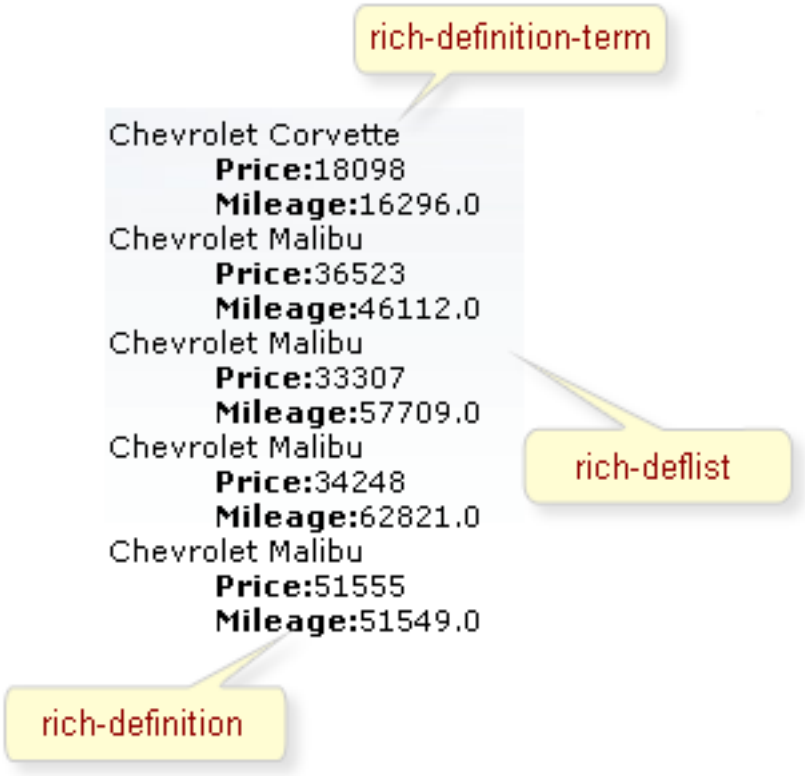


Figure 6.26. Style classes

Table 6.95. Classes names that define a list appearance

Class name	Description
rich-deflist	Defines styles for an html <dl> element
rich-definition	Defines styles for an html <dd> element

Class name	Description
rich-definition-term	Defines styles for an html <dt> element

In order to redefine styles for all **<rich:dataDefinitionList>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:dataDefinitionList>** components, define your own style classes in the corresponding **<rich:dataDefinitionList>** attributes.

6.33.8. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/dataLists.jsf?c=dataDefinitionList] you can see the example of **<rich:dataDefinitionList>** usage and sources for the given example.

6.34. < rich:dataGrid >

6.34.1. Description

The component to render data as a grid that allows choosing data from a model and obtains built-in support of Ajax updates.

Figure 6.27. DataGrid component

6.34.2. Key Features

- A completely skinned table and child elements
- Possibility to update a limited set of rows with AJAX
- Possibility to receive values dynamically from a model

Table 6.96. rich : dataGrid attributes

Attribute Name	Description
ajaxKeys	This attribute defines rows that are updated after an AJAX request
align	left|center|right [CI] Deprecated. This attribute specifies the position of the table with respect to the document. Permitted values: * left: The table is to the left of the document. * center: The table is to the center of the document. * right: The table is to the right of the document
bgcolor	Deprecated. This attribute sets the background color for the document body or table cells. This attribute sets the background color of the canvas for the document body (the BODY element) or for tables (the TABLE, TR, TH, and TD elements). Additional attributes for specifying text color can be used with the BODY element. This attribute has been deprecated in favor of style sheets for specifying background color information
binding	The attribute takes a value-binding expression for a component property of a backing bean
border	This attributes specifies the width of the frame around a component
captionClass	Space-separated list of CSS style class(es) that are be applied to caption for this component
captionStyle	CSS style(s) is/are to be applied to caption when this component is rendered
cellpadding	This attribute specifies the amount of space between the border of the cell and its contents
cellspacing	This attribute specifies the amount of space between the border of the cell and its contents. The attribute also specifies the amount of space to leave between cells
columnClasses	Comma-delimited list of CSS style classes that are be applied to the columns of this table. A space separated list of classes may also be specified for any individual column. If the number of elements in this list is less than the number of columns specified in the "columns" attribute, no "class" attribute is output for each column greater than the number of elements in the list. If

Attribute Name	Description
	the number of elements in the list is greater than the number of columns specified in the "columns" attribute, the elements at the position in the list after the value of the "columns" attribute are ignored
columns	Quantity of columns
componentState	It defines EL-binding for a component state for saving or redefinition
dir	Direction indication for text that does not inherit directionality. Valid values are "LTR" (left-to-right) and "RTL" (right-to-left)
elements	Number of elements in grid
first	A zero-relative row number of the first row to display
footerClass	Space-separated list of CSS style class(es) that are be applied to footer for this component
frame	void|above|below|hsides|lhs|rhs|vsides|box|border [CI] This attribute specifies which sides of the frame surrounding a table will be visible. Possible values: * void: No sides. This is the default value. * above: The top side only. * below: The bottom side only. * hsides: The top and bottom sides only. * vsides: The right and left sides only. * lhs: The left-hand side only. * rhs: The right-hand side only. * box: All four sides. * border: All four sides
headerClass	Space-separated list of CSS style class(es) that are be applied to header for this component
id	Every component may have a unique id that is automatically created if omitted
lang	Code describing the language used in the generated markup for this component
onRowClick	HTML: a script expression; a pointer button is clicked on row
onRowDblClick	HTML: a script expression; a pointer button is double-clicked on row
onRowMouseDown	HTML: script expression; a pointer button is pressed down on row
onRowMouseMove	HTML: a script expression; a pointer is moved within of row

Attribute Name	Description
onRowMouseOut	HTML: a script expression; a pointer is moved away of row
onRowMouseOver	HTML: a script expression; a pointer is moved onto of row
onRowMouseUp	HTML: script expression; a pointer button is released on row
rendered	If "false", this component is not rendered
rowClasses	A comma-delimited list of CSS style classes that is applied to popup table rows. A space separated list of classes may also be specified for any individual row. The styles are applied, in turn, to each row in the table. For example, if the list has two elements, the first style class in the list is applied to the first row, the second to the second row, the first to the third row, the second to the fourth row, etc. In other words, we keep iterating through the list until we reach the end, and then we start at the beginning again
rowKey	RowKey is a representation of an identifier for a specific data row
rowKeyVar	The attribute provides access to a row key in a Request scope
rules	This attribute specifies which rules will appear between cells within a table. The rendering of rules is user agent dependent. Possible values: * none: No rules. This is the default value. * groups: Rules will appear between row groups (see THEAD, TFOOT, and TBODY) and column groups (see COLGROUP and COL) only. * rows: Rules will appear between rows only. * cols: Rules will appear between columns only. * all: Rules will appear between all rows and columns
stateVar	The attribute provides access to a component state on the client side
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
summary	This attribute provides a summary of the table's purpose and structure for user agents rendering to non-visual media such as speech and Braille

Attribute Name	Description
title	Advisory title information about markup elements generated for this component
value	The current value for this component
var	A request-scope attribute via which the data object for the current row will be used when iterating
width	This attribute specifies the desired width of the entire table and is intended for visual user agents. When the value is percentage value, the value is relative to the user agent's available horizontal space. In the absence of any width specification, table width is determined by the user agent

Table 6.97. Component identification parameters

Name	Value
component-type	org.richfaces.DataGrid
component-class	org.richfaces.component.html.HtmlDataGrid
component-family	org.richfaces.DataGrid
renderer-type	org.richfaces.DataGridRenderer
tag-class	org.richfaces.taglib.DataGridTag

6.34.3. Creating the Component with a Page Tag

To create the simplest variant of dataGrid on a page, use the following syntax:

Example:

```
...
    <rich:dataGrid value="#{dataTableScrollerBean.allCars}" var="car">
        <h:outputText value="#{car.model}"/>
    </rich:dataGrid>
...
```

6.34.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlDataGrid;
...
HtmlDataGrid myList = new HtmlDataGrid();
...
```

6.34.5. Details of Usage

The component takes a list from a model and outputs it the same way as with **<h:panelGrid>** for inline data. To define grid properties and styles, use the same definitions as for **<h:panelGrid>.**

The component allows to:

- Use *"header"* and *"footer"* facets for output
- Limit number of output elements (*"elements"* attribute) and define first element for output (*"first"* attribute)
- Bind pages with **<rich:datascroller>** component

Here is an example:

Example:

```
...
    <rich:panel style="width:150px;height:200px;">
        <h:form>
             <rich:dataGrid value="#{dataTableScrollerBean.allCars}" var="car"
 columns="2" elements="4" first="1">
                  <f:facet name="header">
                      <h:outputText value="Car Store"></h:outputText>
                  </f:facet>
                  <rich:panel>
                      <f:facet name="header">
                          <h:outputText value="#{car.make}
 #{car.model}"></h:outputText>
                      </f:facet>
                      <h:panelGrid columns="2">
                           <h:outputText value="Price:"
 styleClass="label"></h:outputText>
                           <h:outputText value="#{car.price}"/>
                           <h:outputText value="Mileage:"
 styleClass="label"></h:outputText>
                           <h:outputText value="#{car.mileage}"/>
                      </h:panelGrid>
                  </rich:panel>
                  <f:facet name="footer">
                      <rich:datascroller></rich:datascroller>
                  </f:facet>
             </rich:dataGrid>
        </h:form>
    </rich:panel>
...
```

This is a result:

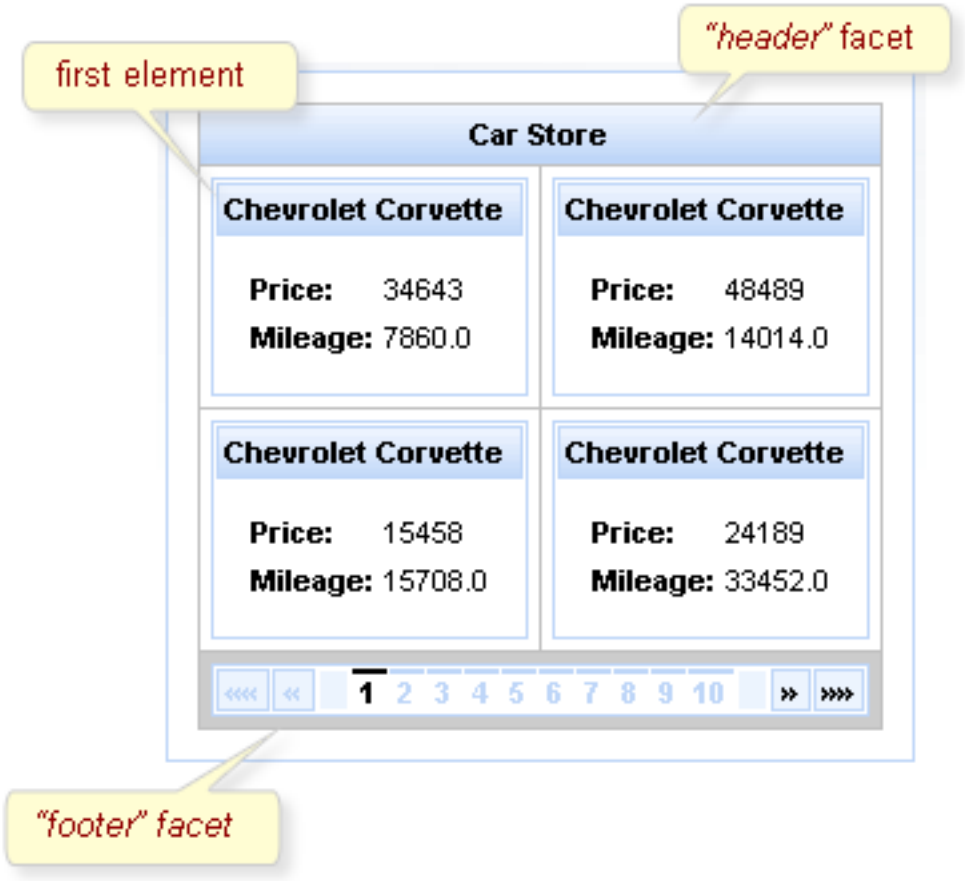


Figure 6.28. Component usage

The component was created basing on the **<a4j:repeat>** component and as a result it could be partially updated with Ajax. *"ajaxKeys"* attribute allows to define rows that are updated after an Ajax request.

Here is an example:

Example:

```
...
    <rich:dataGrid value="#{dataTableScrollerBean.allCars}" var="car"
 ajaxKeys="#{listBean.list}"
                        binding="#{listBean.dataGrid}" id="grid" elements="4"
 columns="2">
        ...
    </rich:dataGrid>
...
    <a4j:commandButton action"#{listBean.action}" reRender="grid" value="Submit"/>
...
```

In the example *"reRender"* attribute contains value of *"id"* attribute for **<rich:dataGrid>** component. As a result the component is updated after an Ajax request.

6.34.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:dataGrid>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:dataGrid>** component

6.34.7. Skin Parameters Redefinition

Skin parameters redefinition for **<rich:dataGrid>** are the same as for the **<rich:dataTable>** component.

6.34.8. Definition of Custom Style Classes

Custom style classes for **<rich:dataGrid>** are the same as for the **<rich:dataTable>** component.

In order to redefine styles for all **<rich:dataGrid>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:dataGrid>** components, define your own style classes in the corresponding **<rich:dataGrid>** attributes.

6.34.9. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/dataGrid.jsf?c=dataGrid] you can see the example of **<rich:dataGrid>** usage and sources for the given example.

6.35. < rich:dataTable >

6.35.1. Description

The component for tables rendering that allows choosing data from a model and obtains built-in support of Ajax updates.

Figure 6.29. DataTable component

6.35.2. Key Features

- A completely skinned table and child elements
- Possibility to insert the complex subcomponents "colGroup" and "subTable"
- Possibility to update a limited set of strings with AJAX

Table 6.98. rich : dataTable attributes

Attribute Name	Description
ajaxKeys	This attribute defines rows that are updated after an AJAX request
align	left|center|right [CI] Deprecated. This attribute specifies the position of the table with respect to the document. Permitted values: * left: The table is to the left of the document. * center: The table is to the center of the document. * right: The table is to the right of the document
bgcolor	Deprecated. This attribute sets the background color for the document body or table cells. This attribute sets the background color of the canvas for the document body (the BODY element) or for tables (the TABLE, TR, TH, and TD elements). Additional attributes for specifying text color can be used with the

Attribute Name	Description
	BODY element. This attribute has been deprecated in favor of style sheets for specifying background color information
binding	The attribute takes a value-binding expression for a component property of a backing bean
border	This attributes specifies the width of the frame around a component
captionClass	Space-separated list of CSS style class(es) that are be applied to caption for this component
captionStyle	CSS style(s) is/are to be applied to caption when this component is rendered
cellpadding	This attribute specifies the amount of space between the border of the cell and its contents
cellspacing	This attribute specifies the amount of space between the border of the cell and its contents. The attribute also specifies the amount of space to leave between cells
columnClasses	Comma-delimited list of CSS style classes that are be applied to the columns of this table. A space separated list of classes may also be specified for any individual column. If the number of elements in this list is less than the number of columns specified in the "columns" attribute, no "class" attribute is output for each column greater than the number of elements in the list. If the number of elements in the list is greater than the number of columns specified in the "columns" attribute, the elements at the position in the list after the value of the "columns" attribute are ignored
columns	Quantity of columns
columnsWidth	Comma-separated list of width attribute for every column. Specifies a default width for each column in the table. In addition to the standard pixel, percentage, and relative values, this attribute allows the special form "0*" (zero asterisk) which means that the width of the each column in the group should be the minimum width necessary to hold the column's contents. This implies that a column's entire contents must be known before its width may be correctly computed. Authors should be aware that specifying "0*" will prevent visual user agents from rendering a table incrementally

Attribute Name	Description
componentState	It defines EL-binding for a component state for saving or redefinition
dir	Direction indication for text that does not inherit directionality. Valid values are "LTR" (left-to-right) and "RTL" (right-to-left)
first	A zero-relative row number of the first row to display
footerClass	Space-separated list of CSS style class(es) that are be applied to footer for this component
frame	void|above|below|hsides|lhs|rhs|vsides|box|border [CI] This attribute specifies which sides of the frame surrounding a table will be visible. Possible values: * void: No sides. This is the default value. * above: The top side only. * below: The bottom side only. * hsides: The top and bottom sides only. * vsides: The right and left sides only. * lhs: The left-hand side only. * rhs: The right-hand side only. * box: All four sides. * border: All four sides
headerClass	Space-separated list of CSS style class(es) that are be applied to header for this component
id	Every component may have a unique id that is automatically created if omitted
lang	Code describing the language used in the generated markup for this component
onRowClick	HTML: a script expression; a pointer button is clicked on row
onRowDblClick	HTML: a script expression; a pointer button is double-clicked on row
onRowMouseDown	HTML: script expression; a pointer button is pressed down on row
onRowMouseMove	HTML: a script expression; a pointer is moved within of row
onRowMouseOut	HTML: a script expression; a pointer is moved away of row
onRowMouseOver	HTML: a script expression; a pointer is moved onto of row

Attribute Name	Description
onRowMouseUp	HTML: script expression; a pointer button is released on row
rendered	If "false", this component is not rendered
rowClasses	A comma-delimited list of CSS style classes that is applied to popup table rows. A space separated list of classes may also be specified for any individual row. The styles are applied, in turn, to each row in the table. For example, if the list has two elements, the first style class in the list is applied to the first row, the second to the second row, the first to the third row, the second to the fourth row, etc. In other words, we keep iterating through the list until we reach the end, and then we start at the beginning again
rowKey	RowKey is a representation of an identifier for a specific data row
rowKeyVar	The attribute provides access to a row key in a Request scope
rows	A number of rows to display, or zero for all remaining rows in the table
rules	This attribute specifies which rules will appear between cells within a table. The rendering of rules is user agent dependent. Possible values: * none: No rules. This is the default value. * groups: Rules will appear between row groups (see THEAD, TFOOT, and TBODY) and column groups (see COLGROUP and COL) only. * rows: Rules will appear between rows only. * cols: Rules will appear between columns only. * all: Rules will appear between all rows and columns
stateVar	The attribute provides access to a component state on the client side
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
summary	This attribute provides a summary of the table's purpose and structure for user agents rendering to non-visual media such as speech and Braille
title	Advisory title information about markup elements generated for this component

Attribute Name	Description
value	The current value for this component
var	A request-scope attribute via which the data object for the current row will be used when iterating
width	This attribute specifies the desired width of the entire table and is intended for visual user agents. When the value is percentage value, the value is relative to the user agent's available horizontal space. In the absence of any width specification, table width is determined by the user agent

Table 6.99. Component identification parameters

Name	Value
component-type	org.richfaces.DataTable
component-class	org.richfaces.component.html.HtmlDataTable
component-family	org.richfaces.DataTable
renderer-type	org.richfaces.DataTableRenderer
tag-class	org.richfaces.taglib.DataTableTag

6.35.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:dataTable value="#{capitalsBean.capitals}" var="capitals">
       <rich:column>
            ...
        </rich:column>
    </rich:dataTable>
...
```

6.35.4. Creating the Component Dynamically from Java

Example:

```
import org.richfaces.component.html.HtmlDataTable;
...
HtmlDataTable myTable = new HtmlDataTable();
...
```

6.35.5. Details of Usage

The **<rich:dataTable>** component is similar to the **<h:dataTable>** one, except Ajax support and skinnability. Ajax support is possible, because the component was created basing on the **<a4j:repeat>** component and as a result it could be partially updated with Ajax. *"ajaxKeys"* attribute allows to define rows that is updated after an Ajax request.

Here is an example:

Example:

```
...
    <rich:dataTable value="#{capitalsBean.capitals}" var="capitals"
                ajaxKeys="#{bean.ajaxSet}" binding="#{bean.table}" id="table">
        ...
    </rich:dataTable>
...
    <a4j:commandButton action"#{tableBean.action}" reRender="table" value="Submit"/>
...
```

In the example *"reRender"* attribute contains value of *"id"* attribute for **<rich:dataTable>** component. As a result the component is updated after an Ajax request.

The component allows to use *"header"*, *"footer"* and *"caption"* facets for output. See an example below:

Example:

```
...
    <rich:dataTable value="#{capitalsBean.capitals}" var="cap" rows="5">
        <f:facet name="caption"><h:outputText value="United States Capitals"
 /></f:facet>
        <f:facet name="header"><h:outputText value="Capitals and States Table"
 /></f:facet>
        <rich:column>
            <f:facet name="header">State Flag</f:facet>
            <h:graphicImage value="#{cap.stateFlag}"/>
            <f:facet name="footer">State Flag</f:facet>
        </rich:column>
        <rich:column>
            <f:facet name="header">State Name</f:facet>
            <h:outputText value="#{cap.state}"/>
            <f:facet name="footer">State Name</f:facet>
        </rich:column>
        <rich:column >
            <f:facet name="header">State Capital</f:facet>
            <h:outputText value="#{cap.name}"/>
            <f:facet name="footer">State Capital</f:facet>
        </rich:column>
        <rich:column>
            <f:facet name="header">Time Zone</f:facet>
            <h:outputText value="#{cap.timeZone}"/>
            <f:facet name="footer">Time Zone</f:facet>
        </rich:column>
        <f:facet name="footer"><h:outputText value="Capitals and States Table"
 /></f:facet>
```

```
    </rich:dataTable>
...
```

This is a result:

Figure 6.30. Component usage

6.35.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:dataTable>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:dataTable>** component

6.35.7. Skin Parameters Redefinition

Table 6.100. Skin parameters redefinition for a table

Skin parameters	CSS properties
tableBackgroundColor	background-color

Table 6.101. Skin parameters redefinition for a header

Skin parameters	CSS properties
headerBackgroundColor	background-color

Table 6.102. Skin parameters redefinition for a footer

Skin parameters	CSS properties
tableFooterBackgroundColor	background-color

Table 6.103. Skin parameters redefinition for a column header

Skin parameters	CSS properties
additionalBackgroundColor	background-color

Table 6.104. Skin parameters redefinition for a column footer

Skin parameters	CSS properties
tableSubfooterBackgroundColor	background-color

Table 6.105. Skin parameters redefinition for cells

Skin parameters	CSS properties
generalSizeFont	font-size
generalTextColor	color
generalFamilyFont	font-family

6.35.8. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

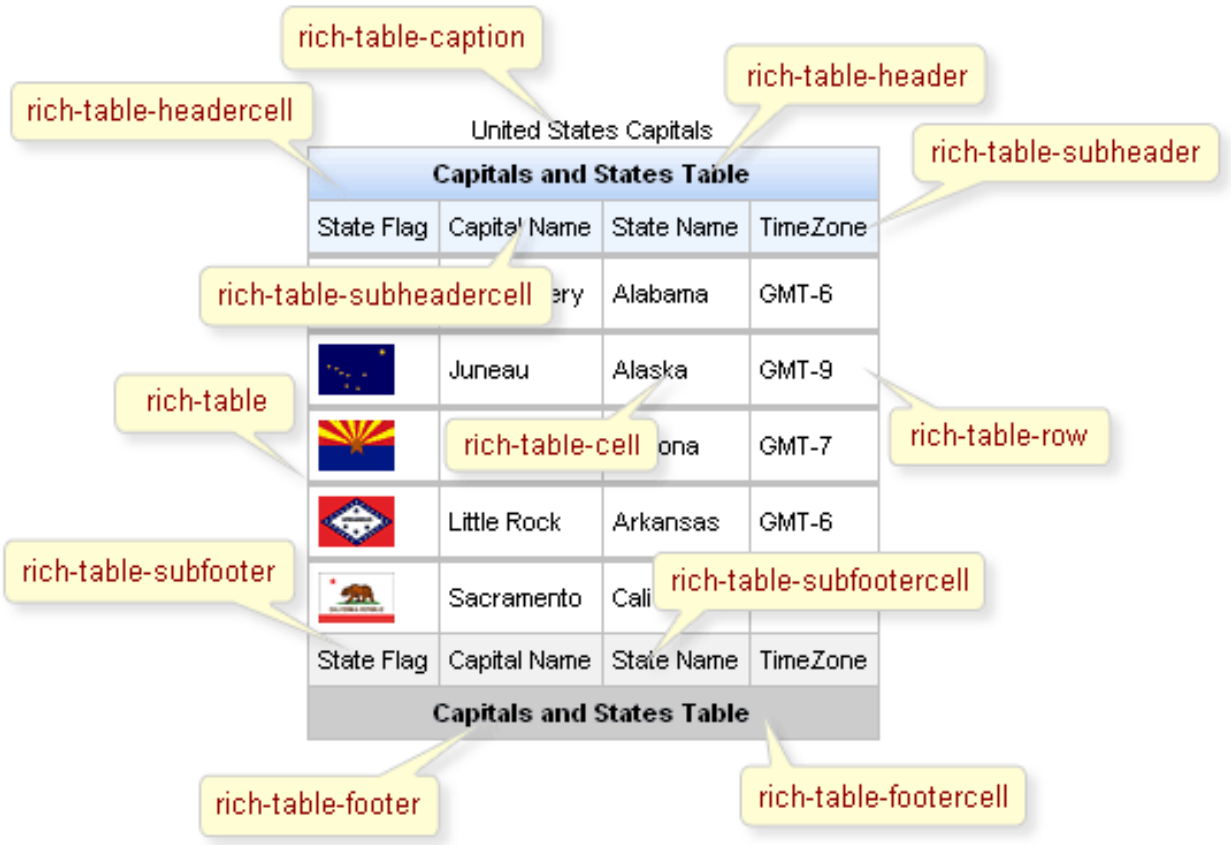


Figure 6.31. DataTable class names

Table 6.106. Classes names that define a whole component appearance

Class name	Description
rich-table	Defines styles for all table
rich-table-caption	Defines styles for a "caption" facet element

Table 6.107. Classes names that define header and footer elements

Class name	Description
rich-table-header	Defines styles for a table header row
rich-table-header-continue	Defines styles for all header lines after the first
rich-table-subheader	Defines styles for a column header
rich-table-footer	Defines styles for a footer row
rich-table-footer-continue	Defines styles for all footer lines after the first
rich-table-subfooter	Defines styles for a column footer

Table 6.108. Classes names that define rows and cells of a table

Class name	Description
rich-table-headercell	Defines styles for a header cell
rich-table-subheadercell	Defines styles for a column header cell
rich-table-cell	Defines styles for a table cell
rich-table-row	Defines styles for a table row
rich-table-firstrow	Defines styles for a table start row
rich-table-footercell	Defines styles for a footer cell
rich-table-subfootercell	Defines styles for a column footer cell

In order to redefine styles for all **<rich:dataTable>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:dataTable>** components, define your own style classes in the corresponding **<rich:dataTable>** attributes.

6.35.9. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/dataTable.jsf?c=dataTable] you can see the example of **<rich:dataTable>** usage and sources for the given example.

The article about **<rich:dataTable>** flexibility can be found here [http://labs.jboss.com/wiki/RichFacesArticleDataTable].

More information about using **<rich:dataTable>** and **<rich:subTable>** could be found on the RichFaces Users Forum. [http://www.jboss.com/index.html?module=bb&op=viewtopic&p=4059044#4059044]

How to use **<rich:dataTable>** and **<rich:dataScroller>** in a context of Extended Data Model see here [http://www.jboss.com/index.html?module=bb&op=viewtopic&t=115636].

6.36. < rich:columnGroup >

6.36.1. Description

The component combines columns in one row to organize complex subparts of a table.

Figure 6.32. ColumnGroup component

6.36.2. Key Features

- Completely skinned table columns and child elements
- Possibility to combine columns and rows inside
- Possibility to update a limited set of strings with Ajax

Table 6.109. rich : columnGroup attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
columnClasses	Comma-delimited list of CSS style classes that are be applied to the columns of this table. A space separated

Attribute Name	Description
	list of classes may also be specified for any individual column. If the number of elements in this list is less than the number of columns specified in the "columns" attribute, no "class" attribute is output for each column greater than the number of elements in the list. If the number of elements in the list is greater than the number of columns specified in the "columns" attribute, the elements at the position in the list after the value of the "columns" attribute are ignored
dir	Direction indication for text that does not inherit directionality. Valid values are "LTR" (left-to-right) and "RTL" (right-to-left)
id	Every component may have a unique id that is automatically created if omitted
lang	Code describing the language used in the generated markup for this component
rendered	If "false", this component is not rendered
rowClasses	A comma-delimited list of CSS style classes that is applied to popup table rows. A space separated list of classes may also be specified for any individual row. The styles are applied, in turn, to each row in the table. For example, if the list has two elements, the first style class in the list is applied to the first row, the second to the second row, the first to the third row, the second to the fourth row, etc. In other words, we keep iterating through the list until we reach the end, and then we start at the beginning again
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
title	Advisory title information about markup elements generated for this component

Table 6.110. Component identification parameters

Name	Value
component-type	org.richfaces.ColumnGroup
component-class	org.richfaces.component.html.HtmlColumnGroup
component-family	org.richfaces.ColumnGroup

Name	Value
renderer-type	org.richfaces.ColumnGroupRenderer
tag-class	org.richfaces.taglib.ColumnGroupTag

6.36.3. Creating the Component with a Page Tag

To create the simplest variant of columnGroup on a page, use the following syntax:

Example:

```
...
        <rich:columnGroup>
                <rich:column>
                        <h:outputText value="Column1"/>
                </rich:column>
                <rich:column>
                        <h:outputText value="Column2"/>
                </rich:column>
        </rich:columnGroup>
...
```

6.36.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlColumnGroup;
...
HtmlColumnGroup myRow = new HtmlColumnGroup();
...
```

6.36.5. Details of Usage

The **<rich:columnGroup>** component combines columns set wrapping them into the **<tr>** element and outputting them into one row. Columns are combined in a group the same way as when the *"breakBefore"* attribute is used for columns to add a moving to the next rows, but the first variant is clearer from a source code. Hence, the following simple examples are very same.

Example:

```
...
    <rich:dataTable value="#{capitalsBean.capitals}" var="cap" rows="5" id="sublist">

        <rich:column colspan="3">
            <f:facet name="header">State Flag</f:facet>
            <h:graphicImage value="#{cap.stateFlag}"/>
        </rich:column>
        <rich:columnGroup>
            <rich:column>
                <h:outputText value="#{cap.state}"/>
            </rich:column>
```

```
            <rich:column >
                <h:outputText value="#{cap.name}"/>
            </rich:column>
            <rich:column >
                <h:outputText value="#{cap.timeZone}"/>
            </rich:column>
        </rich:columnGroup>
    </rich:dataTable>
...
```

And representation without a grouping:

Example:

```
...
    <rich:dataTable value="#{capitalsBean.capitals}" var="cap" rows="5" id="sublist">

        <rich:column colspan="3">
            <f:facet name="header">State Flag</f:facet>
            <h:graphicImage value="#{cap.stateFlag}"/>
        </rich:column>
        <rich:column breakBefore="true">
                <h:outputText value="#{cap.state}"/>
        </rich:column>
        <rich:column breakBefore="true">
                <h:outputText value="#{cap.name}"/>
        </rich:column>
        <rich:column >
                <h:outputText value="#{cap.timeZone}"/>
        </rich:column>
    </rich:dataTable>
....
```

The result is:

Figure 6.33. Generated columnGroup component

It's also possible to use the component for output of complex headers in a table. For example adding of a complex header to a facet for the whole table looks the following way:

Example:

```
...
    <f:facet name="header">
        <rich:columnGroup>
            <rich:column rowspan="2">
                <h:outputText value="State Flag"/>
            </rich:column>
            <rich:column colspan="3">
                <h:outputText value="State Info"/>
            </rich:column>
            <rich:column breakBefore="true">
                <h:outputText value="State Name"/>
            </rich:column>
            <rich:column>
                <h:outputText value="State Capital"/>
            </rich:column>
            <rich:column>
                <h:outputText value="Time Zone"/>
            </rich:column>
        </rich:columnGroup>
    </f:facet>
...
```

Generated on a page as:

State Flag	State Info		
	State Name	State Capital	Time Zone
	Alabama	Montgomery	GMT-6
	Alaska	Juneau	GMT-9
	Arizona	Phoenix	GMT-7
	Arkansas	Little Rock	GMT-6
	California	Sacramento	GMT-8

Figure 6.34. ColumnGroup with complex headers

6.36.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:columnGroup>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:columnGroup>** component

6.36.7. Skin Parameters Redefinition

Skin parameters redefinition for **<rich:columnGroup>** are the same as for the **<rich:dataTable>** component.

6.36.8. Definition of Custom Style Classes

Custom style classes for **<rich:columnGroup>** are the same as for the **<rich:dataTable>** component.

In order to redefine styles for all **<rich:columnGroup>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:columnGroup>** components, define your own style classes in the corresponding **<rich:columnGroup>** attributes.

6.36.9. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/dataTable.jsf?c=columnGroup] you can see the example of **<rich:columnGroup>** usage and sources for the given example.

6.37. < rich:dndParam >

6.37.1. Description

This component is used for passing parameters during drag-and-drop operations.

Table 6.111. rich : dndParam attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
id	Every component may have a unique id that is automatically created if omitted
name	A name of this parameter
rendered	If "false", this component is not rendered
type	This attribute defines parameter functionality. Possible values are "drag", "drop" and "default"
value	The current value for this component

Table 6.112. Component identification parameters

Name	Value
component-type	org.richfaces.DndParam
component-class	org.richfaces.component.html.HtmlDndParam
tag-class	org.richfaces.taglib.DndParamTag

6.37.2. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page, nested in one of the drag-and-drop components:

Example:

```
...
    <rich:dragSupport dragType="file">
        <rich:dndParam name="testDrag" value="testDragValue"
                       type="drag"/>
    </rich:dragSupport>
...
```

6.37.3. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlDndParam;
```

```
...
HtmlDndParam myDparam = new HtmlDndParam();
...
```

6.37.4. Details of Usage

dndParam is used during drag-and-drop operations to pass parameters to an indicator. At first, a parameter type is defined with the type attribute (to specify parameter functionality), then a parameter name could be defined with the name and value attribute. Although, it's possible to use nested content defined inside dndParam for value definition, instead of the attribute.

Variants of usage:

- Parameters passing for a drag icon when an indicator is in drag.

In this case, dndParam is of a drag type and is defined in the following way:

Example:

```
...
    <rich:dragSupport ...>
        <rich:dndParam type="drag" name="dragging">
            <h:graphicImage value="/img/product1_small.png"/>
        </rich:dndParam>
        <h:graphicImage value="product1.png"/>
    </rich:dragSupport>
...
```

Here dndParam defines an icon that is used by an indicator when a drag is on the place of a default icon (e.g. a minimized image of a draggable element)

- Parameters passing for an indicator informational part during a drag.

In this case dndParam is of a drag type and is defined in the following way:

Example:

```
...
    <rich:dragSupport ...>
        <rich:dndParam type="drag" name="label" value="#{msg.subj}"/>
        ...
    </rich:dragSupport>
...
```

The parameter is transmitted into an indicator for usage in an informational part of the dragIndicator component (inside an indicator a call to {label} happens)

- Parameters passing happens when dragged content is brought onto some zone with dropSupport

In this case dndParam is of a drop type and is defined in the following way:

Example:

```
...
    <rich:dropSupport ...>
        <rich:dndParam type="drop" name="comp" >
            <h:graphicImage height="16" width="16" value="/images/comp.png"/>
        </rich:dndParam>
        ...
    </rich:dropSupport >
...
```

Here, dndParam passes icons into an indicator, if dragged content of a comp type is above the given drop zone that processes it on the next drop event.

6.37.5. Look-and-Feel Customization

<rich:dndParam> has no skin parameters and custom style classes, as the component isn't visual.

6.37.6. Relevan Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/dragSupport.jsf?c=dndParam] you can see the example of **<rich:dndParam>** usage and sources for the given example.

6.38. < rich:dropSupport >

6.38.1. Description

This component transforms a parent component into a target zone for drag-and-drop operations. When a draggable element is moved and dropped onto the area of the parent component, Ajax request processing for this event is started.

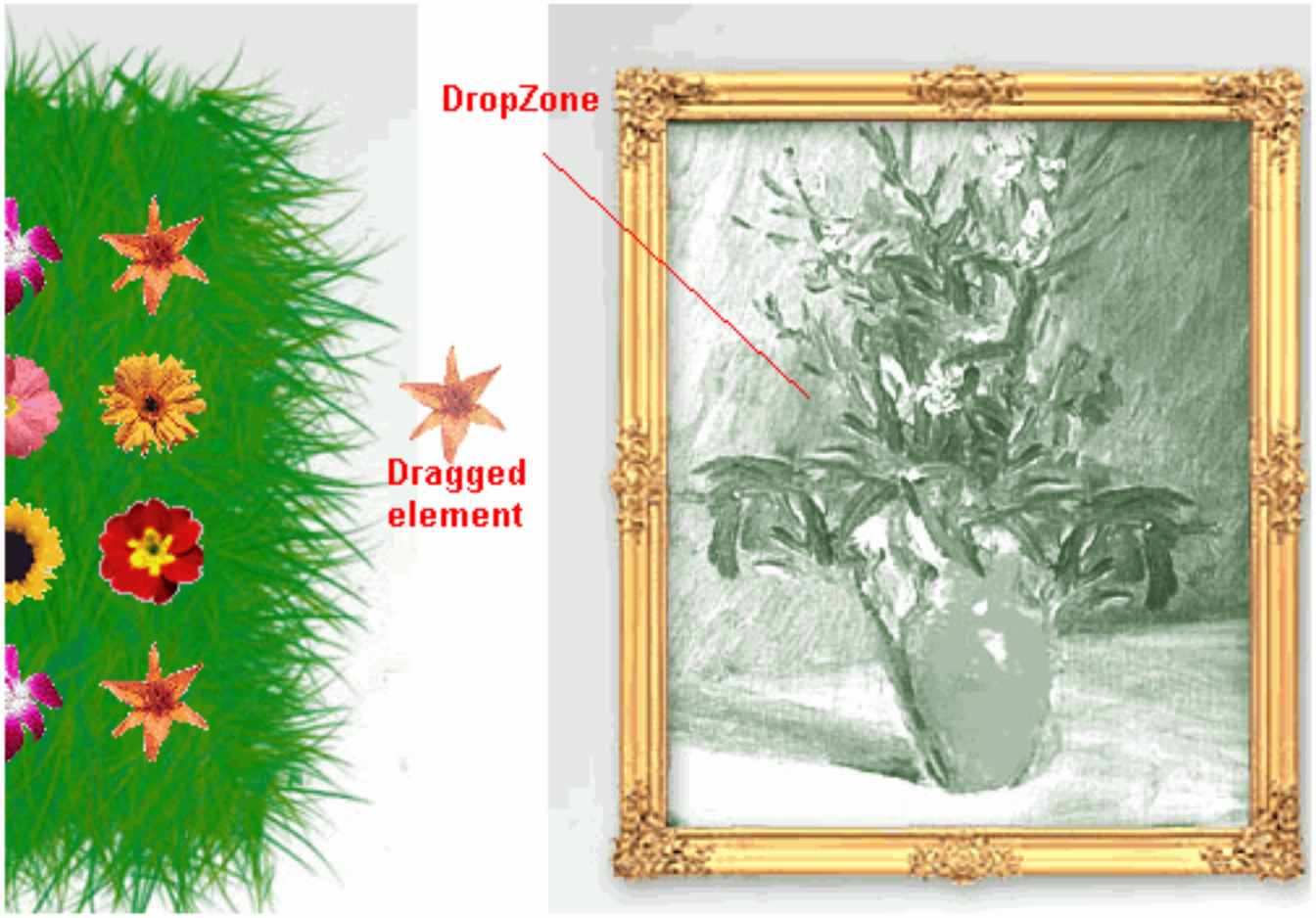


Figure 6.35. DropSupport component

6.38.2. Key Features

- Encodes all necessary JavaScript to perform drop actions
- Can be used within any component type that provides the required properties for drop operations
- Built-in Ajax processing

Table 6.113. rich : dropSupport attributes

Attribute Name	Description
acceptedTypes	List of drag types to be processed by the current drop zone
action	MethodBinding pointing at the application action to be invoked, if this UIComponent is activated by the user, during the Apply Request Values or Invoke Application phase of the request processing lifecycle, depending on the value of the immediate property
actionListener	MethodBinding pointing at method accepting an ActionEvent with return type void

Attribute Name	Description
ajaxSingle	if "true", submits ONLY one field/link, instead of all form controls
binding	The attribute takes a value-binding expression for a component property of a backing bean
bypassUpdates	If "true", after process validations phase it skips updates of model beans on a force render response. It can be used for validating components input
data	Serialized (on default with JSON) data passed on the client by a developer on AJAX request. It's accessible via "data.foo" syntax
disableDefault	Disable default action for target event (append "return false;" to JavaScript)
dropListener	MethodBinding representing an action listener method that will be notified after drop operation.
dropValue	Data to be processed after a drop event
eventsQueue	Name of requests queue to avoid send next request before complete other from same event. Can be used to reduce number of requests of frequently events (key press, mouse move etc.)
focus	id of element to set focus after request completed on client side
id	Every component may have a unique id that is automatically created if omitted
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response isn't actual now
immediate	True means, that the default ActionListener should be executed immediately (i.e. during Apply Request Values phase of the request processing lifecycle), rather than waiting until the Invoke Application phase
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. If "false" (default) updates all rendered by ajax region components

Attribute Name	Description
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
oncomplete	JavaScript code for call after request completed on client side
ondragenter	A JavaScript event handler called on enter draggable object to zone
ondragexit	A JavaScript event handler called after a drag object leaves zone
ondrop	A JavaScript event handler called after a drag object is dropped to zone
ondropend	A JavaScript handler for event fired on a drop even the drop for a given type is not available
onsubmit	JavaScript code for call before submission of ajax event
rendered	If "false", this component is not rendered
requestDelay	Attribute defines the time (in ms.) that the request will be wait in the queue before it is ready to send. When the delay time is over, the request will be sent to the server or removed if the newest 'similar' request is in a queue already
reRender	Id['s] (in format of call UIComponent.findComponent()) of components, rendered in case of AjaxRequest caused by this component. Can be single id, comma-separated list of Id's, or EL Expression with array or Collection
status	ID (in format of call UIComponent.findComponent()) of Request status component
timeout	Response waiting time on a particular request. If a response is not received during this time, the request is aborted
typeMapping	Map between a draggable type and an indicator name on zone. it's defined with the pair (drag type:indicator name))
value	The current value for this component

Table 6.114. Component identification parameters

Name	Value
component-type	org.richfaces.DropSupport
component-class	org.richfaces.component.html.HtmlDropSupport
component-family	org.richfaces.DropSupport
renderer-type	org.richfaces.DropSupportRenderer
tag-class	org.richfaces.taglib.DropSupportTag

6.38.4. Creating the Component with a Page Tag

This simple example shows how to make a panel component a potential drop target for drag-and-drop operations using "text" elements as the dragged items.

Example:

```
...
    <rich:panel>
        <rich:dropSupport acceptedTypes="text"/>
    </rich:panel>
...
```

6.38.5. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlDropSupport;
...
HtmlDropSupport myDragZone = new HtmlDropSupport();
...
```

6.38.6. Details of Usage

As shown in the example, the key attribute for **<rich:dropSupport>** is *"acceptedTypes"* . This attribute defines the types of draggable items that can be dropped onto the designated drop zone.

The second most important attribute for **<rich:dropSupport>** is *"typeMapping"* . This attribute maps a specific type among the acceptable types for draggable items to a specific **<rich:dndParam>** child element under **<rich:dropSupport>** .

Example:

```
...
    <rich:dropSupport acceptedTypes="[iconsDragged, textDragged]"
 typeMapping="{iconsDragged: DropIcon}">
        <rich:dndParam name="DropIcon">
            <h:graphicImage value="/images/drop-icon.png"/>
```

```
  </rich:dndParam>
...
```

In this example, dropping a draggable item of an *"iconsDragged"* type will trigger the use a parameter named *"DropIcon"* in the event processing after a drop event. (Also, an Ajax request is sent, and the action and dropListener defined for the component are called.)

Here is an example of moving records between tables. The example describes all the pieces for drag-and-drop. (To get extra information on these components, read the sections for these components.)

As draggable items, this table contains a list of such items designated as being of type "text":

Example:

```
...
    <rich:dataTable value="#{capitalsBean.capitals}" var="caps">
        <f:facet name="caption">Capitals List</f:facet>
        <h:column>
        <a4j:outputPanel>
            <rich:dragSupport dragIndicator=":form:ind" dragType="text">
                <a4j:actionparam value="#{caps.name}" name="name"/>
            </rich:dragSupport>
            <h:outputText value="#{caps.name}"/>
        </a4j:outputPanel>
        </h:column>
    </rich:dataTable>
...
```

As a drop zone, this panel will accept draggable items of type "text" and then rerender an element with the ID of "box":

Example:

```
...
    <rich:panel style="width:100px;height:100px;">
        <f:facet name="header">Drop Zone</f:facet>
        <rich:dropSupport acceptedTypes="text" reRender="box"
                          dropListener="#{capitalsBean.addCapital2}"/>
    </rich:panel>
...
```

As a part of the page that can be updated in a partial page update, this table has an ID of "box":

Example:

```
...
    <rich:dataTable value="#{capitalsBean.capitals2}" var="cap2" id="box">
        <f:facet name="caption">Capitals chosen</f:facet>
        <h:column>
            <h:outputText value="#{cap2.name}"/>
        </h:column>
    </rich:dataTable>
...
```

And finally, as a listener, this listener will implement the dropped element:

Example:

```
...
    public void addCapital2(DropEvent event) {
        FacesContext context = FacesContext.getCurrentInstance();
        Capital cap = new Capital();

 cap.setName(context.getExternalContext().getRequestParameterMap().get("name").toString());
        capitals2.add(cap);
    }
...
```

Here is the result after a few drops of items from the first table:

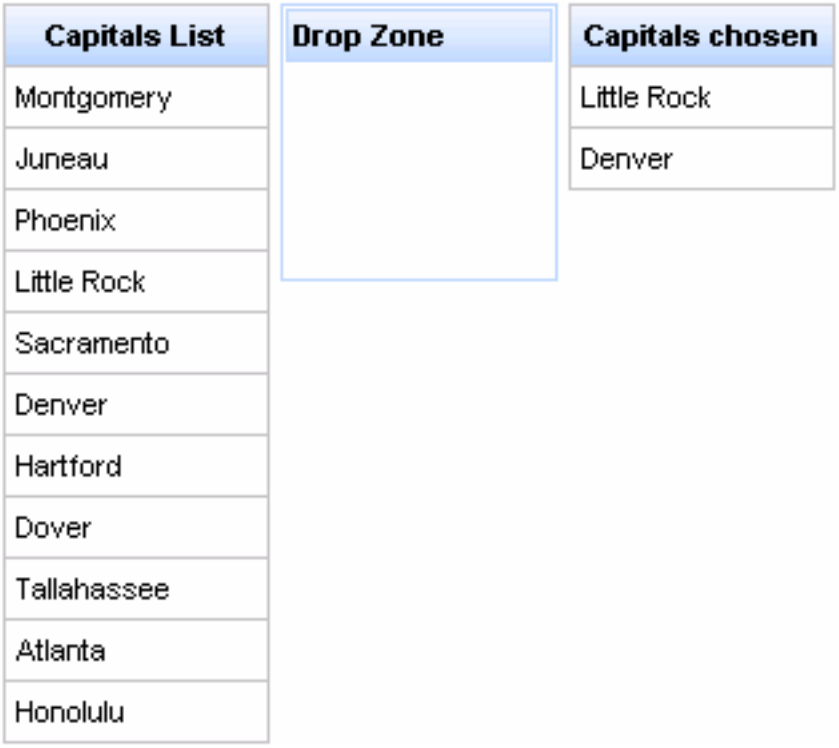


Figure 6.36. Results of drop actions

In this example, items are dragged element-by-element from the rendered list in the first table and dropped on a panel in the middle. After each drop, a drop event is generated and a common Ajax request is performed that renders results in the third table.

As with every Ajax action component, **<rich:dropSupport>** has all the common attributes (*"timeout"*, *"limitToList"*, *"reRender"*, etc.) for Ajax request customization.

Finally, the component has the following extra attributes for event processing on the client:

- ondragenter
- ondragexit

- ondrop
- ondropend

Developers can use their own custom JavaScript functions to handle these events.

6.38.7. Look-and-Feel Customization

<rich:dropSupport> has no skin parameters and custom style classes, as the component isn't visual.

6.38.8. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/dragSupport.jsf?c=dropSupport] you can see the example of **<rich:dropSupport>** usage and sources for the given example.

6.39. < rich:dragIndicator >

6.39.1. Description

This is a component for defining what appears under the mouse cursor during drag-and-drop operations. The displayed drag indicator can show information about the dragged elements.

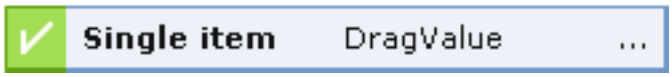


Figure 6.37. DragIndicator component

6.39.2. Key Features

- Customizable look and feel
- Customizable marker according to the type of dragable elements

Table 6.115. rich : dragIndicator attributes

Attribute Name	Description
acceptClass	Corresponds to the HTML class attribute and added to an indicator when a drop is accepted
binding	The attribute takes a value-binding expression for a component property of a backing bean
id	Every component may have a unique id that is automatically created if omitted
rejectClass	Corresponds to the HTML class attribute and added to an indicator when a drop is rejected
rendered	If "false", this component is not rendered

Attribute Name	Description
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute

Table 6.116. Component identification parameters

Name	Value
component-type	org.richfaces.Draggable
component-class	org.richfaces.component.html.HtmlDragIndicator
component-family	org.richfaces.DragIndicator
renderer-type	org.richfaces.DragIndicatorRenderer
tag-class	org.richfaces.taglib.DragIndicatorTag

6.39.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <dnd:dragIndicator  id="indicator">
        <f:facet name="single">
            <f:verbatim>
                <b>Single item</b> {DragInfo}
            </f:verbatim>
        </f:facet>
    </dnd:dragIndicator>
    ...
    <dnd:dragSupport dragType="text" dragIndicator="indicator">
...
```

6.39.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlDragIndicator;
...
HtmlDragIndicator myDragIndicator = new HtmlDragIndicator();
...
```

6.39.5. Details of Usage

In the simplest way the component could be defined empty - in that case a default indicator will be shown like this:

Figure 6.38. Simplest dragIndicator

For indicator customization you need to define one of the following facets:

- single

Indicator shown when dragging a single element.

- multy

Indicator shown when dragging several components (for future components that will support multiple selection).

Thus for specify a look-and-feel you have to define one of these facets and include into it a content that should be shown in indicator.

6.39.5.1. Macro defenitions

To place some data from drag or drop zones into component you can use macro defenitions. They are being defining in the following way:

- **<rich:dndParam>** component with a specific name and value is being included into a drag/drop support component (an image can be defined as placed inside **<rich:dndParam>** without defining a value).
- in needed place a parameter value is included into the marking of indicator using syntax (name of parameter)

For instance, this:

```
...
    <dnd:dropSupport...>
        <dnd:dndParam name="testDrop">
            <h:graphicImage value="/images/file-manager.png" />
        </dnd:dndParam>
    </dnd:dropSupport>
...
```

..Is placed into indicator as follows:

```
...
    <f:facet name="single">
        {testDrop}
    </f:facet>
...
```

6.39.5.2. Predefined macro defenitions

Indicator can accept two default macro defenitions:

- marker
- label

Thus including one of these elements in the marking of indicator, in other words after setting up appropriate parameters in DnD components and defining only default indicator - without specifying facets - a developer gets these parameters values displayed in indicator in the order "marker - label".

6.39.5.3. Marker customization

The macro defenition *"marker"* can be customized depending on what a draggable element is located over. For that you should define one of these three parameters (specify a parameter with one of three names):

- accept

Parameter will be set instead of {marker} into indicator when a draggable element is positioned over drop zone that accept this type of elements

- reject

Parameter will be set instead of {marker} into indicator when a draggable element is positioned over drop zone that doesn't accept this type of elements

- default

Parameter will be set instead of {marker} into indicator when a draggable element is positioned over all the rest of page elements

6.39.6. Look-and-Feel Customization

The **<rich:dragIndicator>** component has no skin parameters and special *style classes* , as it consists of one element generated with a your method on the server. To define some style properties such as an indent or a border, it's possible to use *"style"* and *"styleClass"* attributes on the component.

6.39.7. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/dragSupport.jsf?c=dragIndicator] you can see the example of **<rich:dragIndicator>** usage and sources for the given example.

6.40. < rich:dragSupport >

6.40.1. Description

This component defines a subtree of the component tree as draggable for drag-and-drop operations. Within such a "drag zone," you can click the mouse button on an item and drag it to any component that supports drop operations (a "drop zone"). It encodes all the necessary JavaScript for supporting drag-and-drop operations.

Figure 6.39. DragSupport component

6.40.2. Key Features

- Encodes all necessary JavaScript to perform drag actions
- Can be used within any component type that provides the required properties for drag operations

Table 6.117. rich : dragSupport attributes

Attribute Name	Description
action	MethodBinding pointing at the application action to be invoked, if this UIComponent is activated by the user, during the Apply Request Values or Invoke Application phase of the request processing lifecycle, depending on the value of the immediate property
actionListener	MethodBinding pointing at method accepting an ActionEvent with return type void
ajaxSingle	if "true", submits ONLY one field/link, instead of all form controls

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
bypassUpdates	If "true", after process validations phase it skips updates of model beans on a force render response. It can be used for validating components input
data	Serialized (on default with JSON) data passed on the client by a developer on AJAX request. It's accessible via "data.foo" syntax
disableDefault	Disable default action for target event (append "return false;" to JavaScript)
dragIndicator	Id of the dragIndicator component used as drag operation cursor
dragListener	MethodBinding representing an action listener method that will be notified after drag operation
dragType	Key of a drag object. It's used to define a necessity of processing the current dragged element on the drop zone side
dragValue	Data to be sent to the drop zone after a drop event
eventsQueue	Name of requests queue to avoid send next request before complete other from same event. Can be used to reduce number of requests of frequently events (key press, mouse move etc.)
focus	id of element to set focus after request completed on client side
id	Every component may have a unique id that is automatically created if omitted
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response isn't actual now
immediate	True means, that the default ActionListener should be executed immediately (i.e. during Apply Request Values phase of the request processing lifecycle), rather than waiting until the Invoke Application phase

Attribute Name	Description
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. If "false" (default) updates all rendered by ajax region components
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
oncomplete	JavaScript code for call after request completed on client side
ondragend	A JavaScript event handler called after a drag operation
ondragstart	A JavaScript event handler called before drag object
onsubmit	JavaScript code for call before submission of ajax event
rendered	If "false", this component is not rendered
requestDelay	Attribute defines the time (in ms.) that the request will be wait in the queue before it is ready to send. When the delay time is over, the request will be sent to the server or removed if the newest 'similar' request is in a queue already
reRender	Id['s] (in format of call UIComponent.findComponent()) of components, rendered in case of AjaxRequest caused by this component. Can be single id, comma-separated list of Id's, or EL Expression with array or Collection
status	ID (in format of call UIComponent.findComponent()) of Request status component
timeout	Response waiting time on a particular request. If a response is not received during this time, the request is aborted
value	The current value for this component

Table 6.118. Component identification parameters

Name	Value
component-type	org.richfaces.DragSupport
component-class	org.richfaces.component.html.HtmlDragSupport
component-family	org.richfaces.DragSupport
renderer-type	org.richfaces.DragSupportRenderer

Name	Value
tag-class	org.richfaces.taglib.DragSupportTag

6.40.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <h:panelGrid id="drag1">
        <rich:dragSupport dragType="item"/>
            <!--Some content to be dragged-->
    </h:panelGrid>
...
```

6.40.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlDragSupport;
...
HtmlDragSupport myDragZone = new HtmlDragSupport();
...
```

6.40.5. Details of Usage

The dragSupport tag inside a component completely specifies the events and JavaScript required to use the component and it's children for dragging as part of a drag-and-drop operation. In order to work, though, dragSupport must be placed inside a wrapper component that outputs child components and that has the right events defined on it. Thus, this example won't work, because the h:column tag doesn't provide the necessary properties for redefining events on the client:

Example:

```
...
    <h:column>
        <rich:dragSupport dragIndicator=":form:iii" dragType="text">
            <a4j:actionparam value="#{caps.name}" name="name"/>
        </rich:dragSupport>
        <h:outputText value="#{caps.name}"/>
    </h:column>
...
```

However, using a4j:outputPanel as a wrapper inside h:column, the following code could be used successfully:

Example:

```
...
```

```
    <h:column>
        <a4j:outputPanel>
            <rich:dragSupport dragIndicator=":form:iii" dragType="text">
                <a4j:actionparam value="#{caps.name}" name="name"/>
            </rich:dragSupport>
            <h:outputText value="#{caps.name}"/>
        </a4j:outputPanel>
    </h:column>
...
```

This code makes all rows of this column draggable.

One of the main attributes for dragSupport is *"dragType"*, which associates a name with the drag zone. Only drop zones with this name as an acceptable type can be used in drag-and-drop operations. Here is an example:

Example:

```
...
    <h:panelGrid id="drag1">
        <rich:dragSupport dragType="singleItems" .../>
        <!--Some content to be dragged-->
    </h:panelGrid>
...
    <h:panelGrid id="drag2">
        <rich:dragSupport dragType="groups" .../>
        <!--Some content to be dragged-->
    </h:panelGrid>
...
    <h:panelGrid id="drop1">
        <rich:dropSupport acceptedTypes="singleItems" .../>
        <!--Drop zone content-->
    </h:panelGrid>
...
```

In this example, the drop1 panel grid is a drop zone that invokes drag-and-drop for drops of items from the first drag1 panel grid, but not the second drag2 panel grid. In the section about dropSupport, you will find an example that shows more detailed information about moving data between tables with drag and drop.

The dragSupport component also has a *"value"* attribute for passing data into the processing after a drop event.

One more important attribute for **<rich:dragSupport>** is the *"dragIndicator"* attribute that point to the component id of the **<rich:dragIndicator>** component to be used for dragged items from this drag zone. If it isn't defined, a default indicator for drag operations is used.

Finally, the component has the following extra attributes for event processing on the client:

- ondragenter
- ondragexit

You can use your own custom JavaScript functions to handle these events.

6.40.6. Look-and-Feel Customization

<rich:dragSupport> has no skin parameters and custom style classes, as the component isn't visual.

6.40.7. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/dragSupport.jsf?c=dragSupport] you can see the example of **<rich:dragSupport>** usage and sources for the given example.

6.41. < rich:dropListener >

6.41.1. Description

The **<rich:dropListener>** represents an action listener method that will be notified after drop operation.

6.41.2. Key Features

- Allows to define some drop listeners for the components with "Drag and Drop" support

Table 6.119. rich : dropListener attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
type	Attribute defines the fully qualified Java class name for listener

Table 6.120. Component identification parameters

Name	Value
listener-class	org.richfaces.event.DropListener
event-class	org.richfaces.event.DropEvent
tag-class	org.richfaces.taglib.DropListenerTag

6.41.3. Creating the Component with a Page Tag

Simple Component definition on a page:

Example:

```
...
 <rich:dropListener type="demo.Bean"/>
...
```

6.41.4. Creating the Component Dynamically Using Java

Example:

```
package demo;

public class ImplBean implements org.richfaces.event.DropListener{
 ...
}
```

```
import demo.ImplBean;
...
ImplBean myListener = new ImplBean();
...
```

6.41.5. Details of Usage

The <rich:dropListener> is used as nested tag with components like <rich:dropSupport>, <rich:tree> and <rich:treeNode>.

Attribute *"type"* defines the fully qualified Java class name for listener. This class should implement org.richfaces.event.DropListener interface.

The typical variant of using:

```
...
<rich:panel style="width:100px;height:100px;">
 <f:facet name="header">Drop Zone</f:facet>
 <rich:dropSupport acceptedTypes="text">
  <rich:dropListener type="demo.ListenerBean"/>
 </rich:dropSupport>
</rich:panel>
...
```

Java bean source:

```
package demo;

import org.richfaces.event.DropEvent;

public class ListenerBean implements org.richfaces.event.DropListener{
...
 public void processDrop(DropEvent arg0){
  //Custom Developer Code
 }
...
}
```

6.41.6. Look-and-Feel Customization

<rich:dropListener> has no skin parameters and custom style classes, as the component isn't visual.

6.42. < rich:dragListener >

6.42.1. Description

The **<rich:dragListener>** represents an action listener method that will be notified after drag operation.

6.42.2. Key Features

- Allows to define some drag listeners for the components with "Drag and Drop" support

Table 6.121. rich : dragListener attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
type	Attribute defines the fully qualified Java class name for listener

Table 6.122. Component identification parameters

Name	Value
listener-class	org.richfaces.event.DragListener
event-class	org.richfaces.event.DragEvent
tag-class	org.richfaces.taglib.DragListenerTag

6.42.3. Creating the Component with a Page Tag

Simple Component definition on a page:

Example:

```
...
 <rich:dragListener type="demo.Bean"/>
...
```

6.42.4. Creating the Component Dynamically Using Java

Example:

```
package demo;

public class ImplBean implements org.richfaces.event.DragListener{
 ...
}
```

```
import demo.ImplBean;
...
ImplBean myDragListener = new ImplBean();
...
```

6.42.5. Details of Usage

The <rich:dragListener> is used as nested tag with components like <rich:dragSupport>, <rich:tree> and <rich:treeNode>.

Attribute *"type"* defines the fully qualified Java class name for listener. This class should implement org.richfaces.event.DragListener interface.

The typical variant of using:

```
...
<h:panelGrid id="dragPanel">
 <rich:dragSupport dragType="item">
  <rich:dragListener type="demo.ListenerBean"/>
 </rich:dragSupport>
 <!--Some content to be dragged-->
</h:panelGrid>
...
```

Java bean source:

```
package demo;

import org.richfaces.event.DragEvent;

public class ListenerBean implements org.richfaces.event.DragListener{
...
 public void processDrag(DragEvent arg0){
  //Custom Developer Code
 }
...
}
```

6.42.6. Look-and-Feel Customization

<rich:dragListener> has no skin parameters and custom style classes, as the component isn't visual.

6.43. < rich:dropDownMenu >

6.43.1. Description

The **<rich:dropDownMenu>** component is used for creating multilevel drop-down menus.

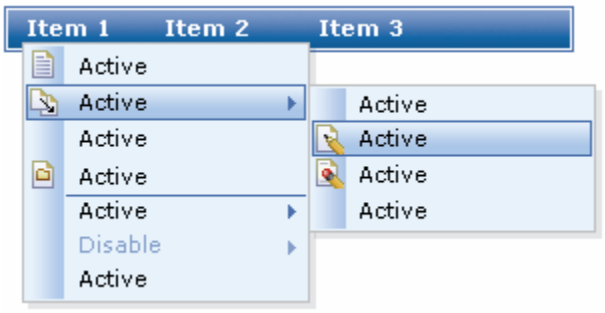


Figure 6.40. <rich:dropDownMenu> component

6.43.2. Key Features

- Highly customizable look-and-feel
- Pop-up appearance event customization
- Different submission modes
- Ability to define a complex representation for elements
- Support for disabling
- Smart user-defined positioning

Table 6.123. rich : dropDownMenu attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
direction	Defines direction of the popup list to appear (top-right, top-left bottom-right, bottom-left, auto(default))
disabled	Attribute 'disabled' provides possibility to make the whole menu disabled if its value equals to "true".
disabledItemClass	Space-separated list of CSS style class(es) that are be applied to disabled item of this component
disabledItemStyle	CSS style(s) is/are to be applied to disabled item when this component is rendered.
event	Defines the event on the representation element that triggers the menu's appearance.
hideDelay	Delay between losing focus and menu closing.
horizontalOffset	Sets the horizontal offset between popup list and label element conjunction point
id	

Attribute Name	Description
	Every component may have a unique id that is automatically created if omitted
itemClass	Space-separated list of CSS style class(es) that are be applied to item of this component
itemStyle	CSS style(s) is/are to be applied to item when this component is rendered.
jointPoint	Set the corner of the label for the popup to be connected with. (auto(default), tr, tl, bl, br, where tr â## top-right)
oncollapse	Event must occurs on menu closure
onexpand	Event must occurs on menu opening
ongroupactivate	HTML: script expression; some group was activated.
onitemselect	HTML: script expression; some item was selected.
onmousemove	HTML: script expression; a pointer was moved within.
onmouseout	HTML: script expression; a pointer was moved away.
onmouseover	HTML: script expression; a pointer was moved onto.
popupWidth	Set minimal width for the all of the lists that will appear.
rendered	If "false", this component is not rendered
selectItemClass	Space-separated list of CSS style class(es) that are be applied to selected item of this component.
selectItemStyle	CSS style(s) is/are to be applied to selected item when this component is rendered.
showDelay	Delay between event and menu showing.
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
submitMode	Set the submission mode for all menu items of the menu except ones where this attribute redefined. (ajax,server(Default),none)
value	Defines representation text for Label used for menu calls.
verticalOffset	Sets the vertical offset between popup list and label element conjunction point

Table 6.124. Component identification parameters

Name	Value
component-type	org.richfaces.DropDownMenu
component-class	org.richfaces.component.html.HtmlDropDownMenu
component-family	org.richfaces.DropDownMenu
renderer-type	org.richfaces.DropDownMenuRenderer
tag-class	org.richfaces.taglib.DropDownMenuTag

6.43.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:dropDownMenu value="Item1">
        <!--Nested menu components-->
    </rich:dropDownMenu>
...
```

6.43.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlDropDownMenu;
...
HtmlDropDownMenu myDropDownMenu = new HtmlDropDownMenu();
...
```

6.43.5. Details of Usage

All attributes except *"value"* are optional. The *"value"* attribute defines text to be represented. If you can use the *"label"* facet, you can even not use the *"value"* attribute.

Here is an example:

Example:

```
...
    <f:facet name="label">
        <h:graphicImage value="/images/img1.gif"/>
    </f:facet>
...
```

Use the *"event"* attribute to define an event for the represented element that triggers a menu appearance. An example of a menu appearance on a click can be seen below.

Example:

```
...
    <rich:dropDownMenu event="onclick" value="Item1">
        <!--Nested menu components-->
    </rich:dropDownMenu>
...
```

The **<rich:dropDownMenu>** *"submitMode"* attribute can be set to three possible parameters:

- Server (default)

Regular form submission request is used.

- Ajax

Ajax submission is used for switching.

- None

The *"action"* and *"actionListener"* item's attributes are ignored. Menu items don't fire any submits themselves. The behavior is fully defined by the components nested into items.

Note:

As the **<rich:dropDownMenu>** component doesn't provide its own form, use it between <h:form> and </h:form> tags.

The *"direction"* and *"jointPoint"* attributes are used for defining aspects of menu appearance.

Possible values for the *"direction"* attribute are:

- top-left - a menu drops to the top and left
- top-right - a menu drops to the top and right
- bottom-left - a menu drops to the bottom and left
- bottom-right - a menu drops to the bottom and right
- auto - smart positioning activation

Possible values for the *"jointPoint"* attribute are:

- tr - a menu is attached to the top-right point of the button element
- tl - a menu is attached to the top-left point of the button element
- br - a menu is attached to the bottom-right point of the button element
- bl - a menu is attached to the bottom-left point of the button element
- auto - smart positioning activation

By default, the *"direction"* and *"jointPoint"* attributes are set to *"auto"* .

Here is an example:

Example:

```
...
    <rich:dropDownMenu value="Item1" direction="bottom-right" jointPoint="tr">
        <!--Nested menu components-->
    </rich:dropDownMenu>
...
```

This is the result:

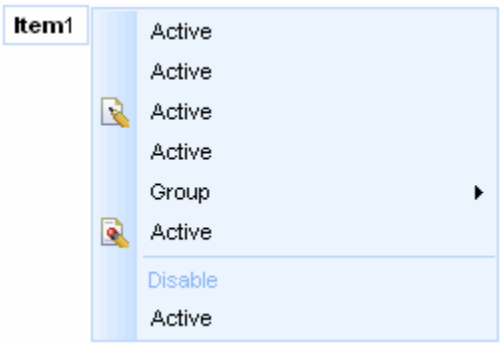


Figure 6.41. Using the "direction" and"joinPoint" attributes

You can correct an offset of the pop-up list relative to the label using the following attributes: *"horizontalOffset"* and *"verticalOffset"* .

Here is an example:

Example:

```
...
    <rich:dropDownMenu value="Item1" direction="bottom-right" jointPoint="tr"
 horizontalOffset="-15" verticalOffset="0">
        <!--Nested menu components-->
    </rich:dropDownMenu>
...
```

This is the result:

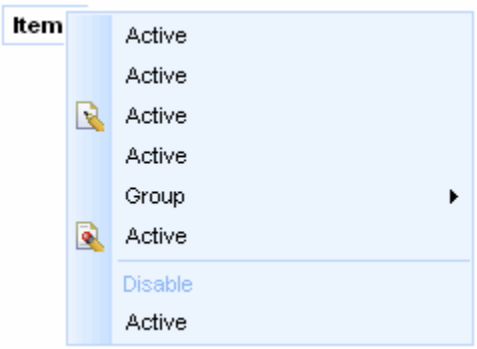


Figure 6.42. Using the "horizontalOffset" and "verticalOffset" attributes

The **<rich:dropDownMenu>** component allows to use *"labelDisabled"* . It' necessary to define *"disabled"* attribute as "true" for dropDownMenu. An example is placed below.

Example:

```
...
    <rich:dropDownMenu  disabled="true">
        <f:facet name="labelDisabled">
            <h:graphicImage value="/images/ico1.gif"/>
        </f:facet>
        <!--Nested menu components-->
    </rich:dropDownMenu>
...
```

6.43.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:dropDownMenu>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:dropDownMenu>** component

6.43.7. Skin Parameters Redefinition

Table 6.125. Skin parameters redefinition for a label element

Skin parameters	CSS properties
generalFamilyFont	font-family
generalSizeFont	font-size

Table 6.126. Skin parameters redefinition for a selected label

Skin parameters	CSS properties
panelBorderColor	border-color
controlBackgroundColor	background-color
generalTextColor	background-colorcolor

Table 6.127. Skin parameters redefinition for a border

Skin parameters	CSS properties
panelBorderColor	border-color
additionalBackgroundColor	background-color

Table 6.128. Skin parameters redefinition for a background

Skin parameters	CSS properties
additionalBackgroundColor	border-top-color
additionalBackgroundColor	border-left-color
additionalBackgroundColor	border-right-color

6.43.8. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

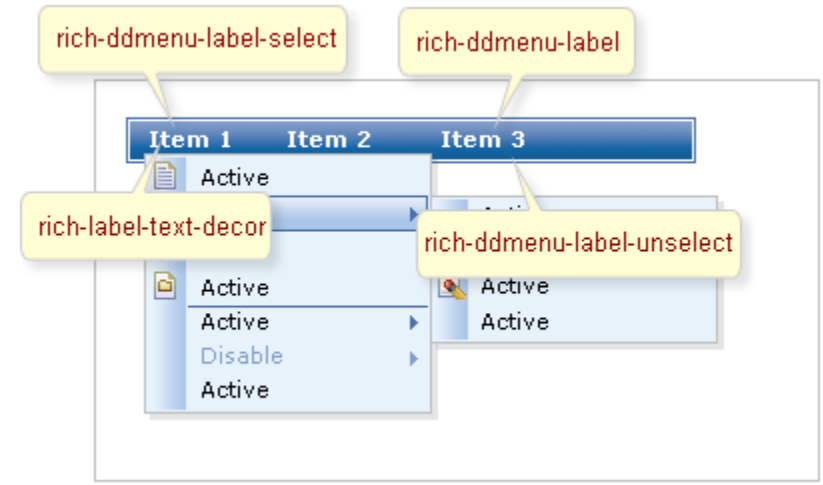


Figure 6.43. Classes names

Table 6.129. Classes names that define a label

Class name	Description
rich-label-text-decor	Defines text style for a representation element
rich-ddmenu-label	Defines styles for a wrapper element of a representation element
rich-ddmenu-label-select	Defines styles for a wrapper element of a selected representation element
rich-ddmenu-label-unselect	Defines styles for a wrapper element of an unselected representation element
rich-ddmenu-label-disabled	Defines styles for a wrapper element of a disabled representation element

On the screenshot there are classes names that define styles for component elements.

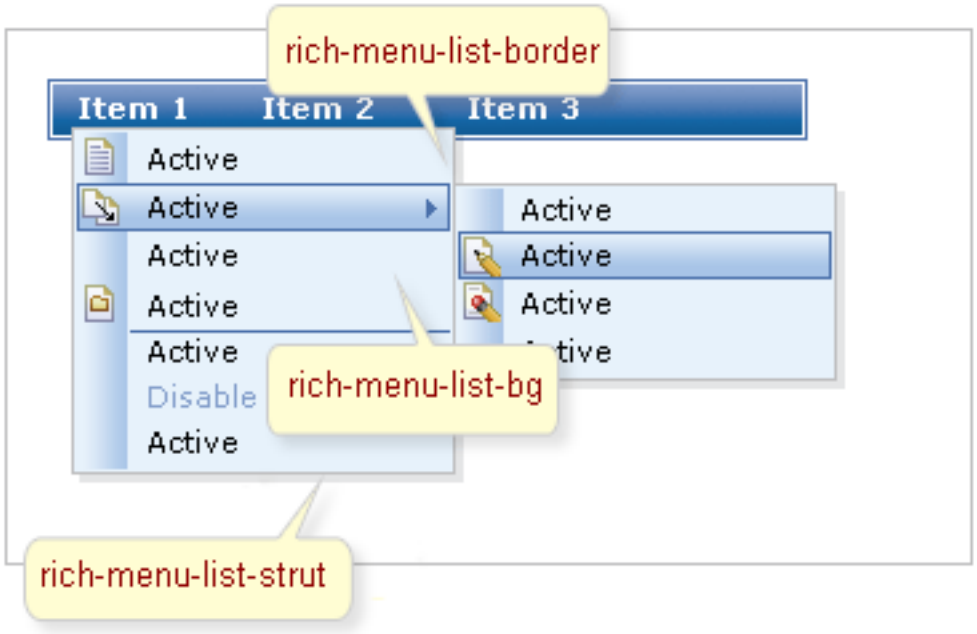


Figure 6.44. Classes names

Table 6.130. Classes names that define a popup element

Class name	Description
rich-menu-list-border	Defines styles for borders
rich-menu-list-bg	Defines styles for a general background list
rich-menu-list-strut	Defines styles for a wrapper element for a strut of a popup list

In order to redefine styles for all **<rich:dropDownMenu>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:dropDownMenu>** components, define your own style classes in the corresponding **<rich:dropDownMenu>** attributes.

6.43.9. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/dropDownMenu.jsf?c=dropDownMenu] you can see the example of **<rich:dropDownMenu>** usage and sources for the given example.

6.44. < rich:menuGroup >

6.44.1. Description

The **<rich:menuGroup>** component is used to define an expandable group of items inside a pop-up list or another group.

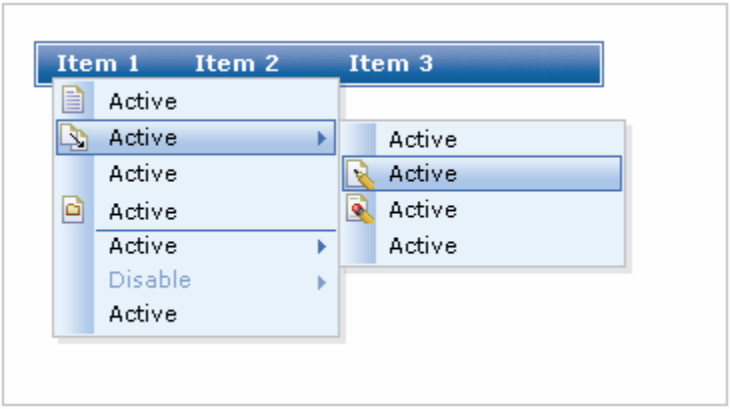


Figure 6.45. <rich:menuGroup> component

6.44.2. Key Features

- Highly customizable look-and-feel
- Grouping of any menu's items
- Pop-up appearance event customization
- Support for disabling
- Smart user-defined positioning

Table 6.131. rich : menuGroup attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
converter	Id of Converter to be used or reference to a Converter
direction	Defines direction of the popup sublist to appear (right, left, auto(Default), left-down, left-up, right-down, right-up)
disabled	If "true" sets state of the item to disabled state. "false" is default
event	Defines the event on the representation element that triggers the menu's appearance
icon	Path to the icon to be displayed for the enabled item state
iconClass	Class to be applied to icon element
iconDisabled	Path to the icon to be displayed for the disabled item state

Attribute Name	Description
iconFolder	Path to the folder icon to be displayed for the enabled item state
iconFolderDisabled	Path to the folder icon to be displayed for the enabled item state
iconStyle	CSS style rules to be applied to icon element
id	Every component may have a unique id that is automatically created if omitted
onclose	HTML: script expression; group was closed
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onopen	HTML: script expression; group was opened
rendered	If "false", this component is not rendered
selectClass	Class to be applied to selected items
selectStyle	CSS style rules to be applied to selected items
showDelay	Delay between event and menu showing
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
value	Defines representation text for menuItem

Table 6.132. Component identification parameters

Name	Value
component-type	org.richfaces.MenuGroup
component-class	org.richfaces.component.html.HtmlMenuGroup
component-family	org.richfaces.DropDownMenu
renderer-type	org.richfaces.MenuGroupRenderer
tag-class	org.richfaces.taglib.MenuGroupTag

6.44.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:dropDownMenu value="Active">
        ...
        <rich:menuGroup value="Active">
            <!--Nested menu components-->
        </rich:menuGroup>
        ...
    </rich:dropDownMenu >
...
```

6.44.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlMenuGroup;
...
HtmlMenuGroup myMenuGroup = new HtmlMenuGroup();
...
```

6.44.5. Details of Usage

The *"value"* attribute defines the text representation of a group element in the page.

The *"icon"* attribute defines an icon for the component. The *"iconDisabled"* attribute defines an icon for when the group is disabled. Also you can use the *"icon"* and *"iconDisabled"* facets. If the facets are defined, the corresponding *"icon"* and *"iconDisabled"* attributes are ignored and the facets' contents are used as icons. This could be used for an item check box implementation.

Here is an example:

```
...
    <f:facet name="icon">
        <h:selectBooleanCheckbox value="#{bean.property}"/>
    </f:facet>
...
```

The *"iconFolder"* and *"iconFolderDisabled"* attributes are defined for using icons as folder icons. The *"iconFolder"* and *"iconFolderDisabled"* facets use their contents as folder icon representations in place of the attribute values.

The *"direction"* attribute is used to define which way to display the menu as shown in the example below:

Possible values are:

- left - down - a submenu is attached to the left side of the menu and is dropping down
- left - up - a submenu is attached to the left side of the menu and is dropping up
- right - down - a submenu is attached to the right side of the menu and is dropping down

- right - up - a submenu is attached to the right side of the menu and is dropping up
- auto - smart positioning activation

By default, the *"direction"* attribute is set to *"auto"*.

Here is an example:

```
...
    <rich:menuGroup value="Active" direction="left-down"
        <!--Nested menu components-->
    </rich:menuGroup>
...
```

This would be the result:

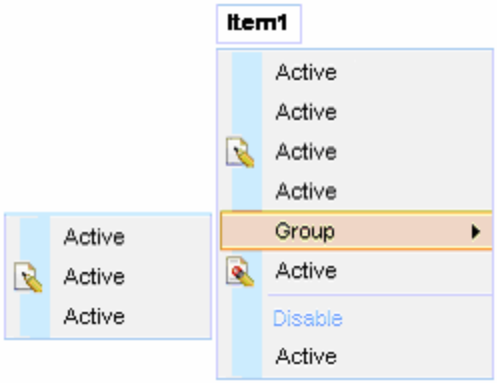


Figure 6.46. Using the *"direction"* attribute

6.44.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:menuGroup>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:menuGroup>** component

6.44.7. Skin Parameters Redefinition

Table 6.133. Skin parameters redefinition for a group

Skin parameters	CSS properties
generalFamilyFont	font-family
generalSizeFont	font-size

Table 6.134. Skin parameters redefinition for a disabled group

Skin parameters	CSS properties
tabDisabledTextColor	color

Table 6.135. Skin parameters redefinition for a label

Skin parameters	CSS properties
generalTextColor	color

6.44.8. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

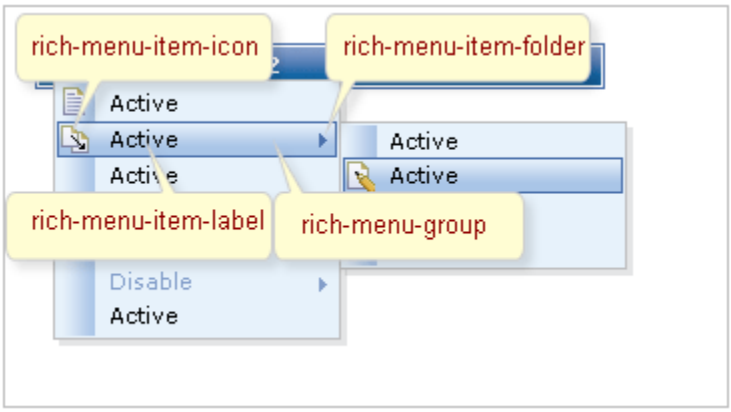


Figure 6.47. Classes names

Table 6.136. Classes names that define an appearance of group elements

Class name	Description
rich-menu-group	Defines styles for a wrapper element for a group
rich-menu-item-label	Defines styles for a label of an item
rich-menu-item-icon	Defines styles for the left icon of an item
rich-menu-item-folder	Defines styles for the right icon of an item

Table 6.137. Classes names that define different states

Class name	Description
rich-menu-item-label-disabled	Defines styles for a label of a disabled item
rich-menu-item-icon-disabled	Defines styles for the left icon of a disabled item
rich-menu-item-folder-disabled	Defines styles for the right icon of a disabled item

Class name	Description
rich-menu-group-hover	Defines styles for a wrapper element of a hover group
rich-menu-item-icon-enabled	Defines styles for the left icon of an enabled item
rich-menu-item-icon-selected	Defines styles for the left icon of a selected item

In order to redefine styles for all **<rich:menuGroup>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:menuGroup>** components, define your own style classes in the corresponding **<rich:menuGroup>** attributes.

6.44.9. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/dropDownMenu.jsf?c=menuGroup] you can see the example of **<rich:menuGroup>** usage and sources for the given example.

6.45. < rich:menuItem >

6.45.1. Description

The **<rich:menuItem>** component is used for the definition of a single item inside a pop-up list.

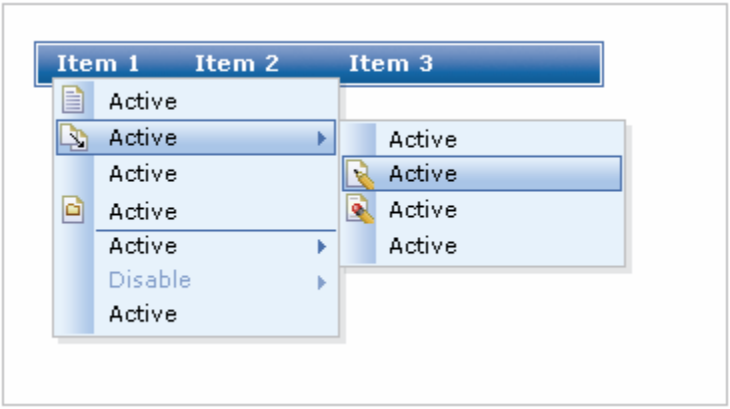


Figure 6.48. <rich:menuItem> component

6.45.2. Key Features

- Highly customizable look-and-feel
- Different submission modes
- Support for disabling
- Custom content support

Table 6.138. rich : menuItem attributes

Attribute Name	Description
action	MethodBinding pointing at the application action to be invoked, if this UIComponent is activated by the user, during the Apply Request Values or Invoke Application phase of the request processing lifecycle, depending on the value of the immediate property
actionExpression	The action method binding expression
actionListener	MethodBinding pointing at method accepting an ActionEvent with return type void
ajaxSingle	if "true", submits ONLY one field/link, instead of all form controls
binding	The attribute takes a value-binding expression for a component property of a backing bean
bypassUpdates	If "true", after process validations phase it skips updates of model beans on a force render response. It can be used for validating components input
data	Serialized (on default with JSON) data passed on the client by a developer on AJAX request. It's accessible via "data.foo" syntax
disabled	If "true" sets state of the item to disabled state. "false" is default
eventsQueue	Name of requests queue to avoid send next request before complete other from same event. Can be used to reduce number of requests of frequently events (key press, mouse move etc.)
focus	id of element to set focus after request completed on client side
icon	Path to the icon to be displayed for the enabled item state
iconClass	Class to be applied to icon element
iconDisabled	Path to the icon to be displayed for the disabled item state.
iconStyle	CSS style rules to be applied to icon element
id	Every component may have a unique id that is automatically created if omitted

Attribute Name	Description
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response isn't actual now
immediate	True means, that the default ActionListener should be executed immediately (i.e. during Apply Request Values phase of the request processing lifecycle), rather than waiting until the Invoke Application phase
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. If "false" (default) updates all rendered by ajax region components
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
onclick	HTML: a script expression; a pointer button is clicked
oncomplete	JavaScript code for call after request completed on client side
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
onselect	HTML: script expression; The onselect event occurs when a user selects some menu item
rendered	If "false", this component is not rendered
requestDelay	Attribute defines the time (in ms.) that the request will be wait in the queue before it is ready to send. When the delay time is over, the request will be sent to the server or removed if the newest 'similar' request is in a queue already
reRender	Id['s] (in format of call UIComponent.findComponent()) of components, rendered in case of AjaxRequest caused by this

Attribute Name	Description
	component. Can be single id, comma-separated list of Id's, or EL Expression with array or Collection
selectClass	Class to be applied to selected items
selectStyle	CSS style rules to be applied to selected items
status	ID (in format of call UIComponent.findComponent()) of Request status component
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
submitMode	Set the submission mode (ajax, server(Default), none)
target	Name of a frame where the resource retrieved via this hyperlink is to be displayed
timeout	Response waiting time on a particular request. If a response is not received during this time, the request is aborted
value	The current value for this component

Table 6.139. Component identification parameters

Name	Value
component-type	org.richfaces.MenuItem
component-class	org.richfaces.component.html.HtmlMenuItem
component-family	org.richfaces.DropDownMenu
renderer-type	org.richfaces.MenuItemRenderer
tag-class	org.richfaces.taglib.MenuItemTag

6.45.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:dropDownMenu>
        ...
        <rich:menuItem value="Active"/>
        ...
    <rich:dropDownMenu>
...
```

6.45.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlMenuItem;
...
HtmlMenuItem myMenuItem = new HtmlMenuItem();
...
```

6.45.5. Details of Usage

The *"value"* attribute defines the text representation for an item element.

There are two icon-related attributes. The *"icon"* attribute defines an icon. The *"iconDisabled"* attribute defines an icon for a disabled item. Also you can use the *"icon"* and *"iconDisabled"* facets. If the facets are defined, the corresponding *"icon"* and *"iconDisabled"* attributes are ignored and the facets content is shown as an icon. It could be used for an item check box implementation.

Here is an example:

```
...
    <f:facet name="icon">
        <h:selectBooleanCheckbox value="#{bean.property}"/>
    </f:facet>
...
```

The **<rich:menuItem>** *"submitMode"* attribute can be set to three possible parameters:

- Server (default)

Regular form submission request is used.

- Ajax

Ajax submission is used for switching.

- None

The *"action"* and *"actionListener"* item's attributes are ignored. Menu items don' fire any submits themselves. The behavior is fully defined by the components nested into items.

For example, you can put any content into an item, but, in this case, you should set the *"mode"* attribute as *"none"* .

Here is an example:

```
...
    <rich:dropDownMenu>
        ...
        <rich:menuItem submitMode="none">
            <h:outputLink value="www.jboss.org"/>
        </rich:menuItem>
        ...
```

```
    <rich:dropDownMenu>
...
```

You can use the *"disabled"* attribute to set the item state.

Here is an example:

```
...
    <rich:dropDownMenu>
        <rich:menuItem value="Disable" disabled="true"/>
    <rich:dropDownMenu>
...
```

6.45.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:menuItem>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:menuItem>** component

6.45.7. Skin Parameters Redefinition

Table 6.140. Skin parameters redefinition for an item

Skin parameters	CSS properties
generalFamilyFont	font-family
generalSizeFont	font-size

Table 6.141. Skin parameters redefinition for a hovered item

Skin parameters	CSS properties
tipBorderColor	border-color
tipBackgroundColor	background-color

Table 6.142. Skin parameters redefinition for a disabled item

Skin parameters	CSS properties
tabDisabledTextColor	color

Table 6.143. Skin parameters redefinition for a label

Skin parameters	CSS properties
generalTextColor	color

6.45.8. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

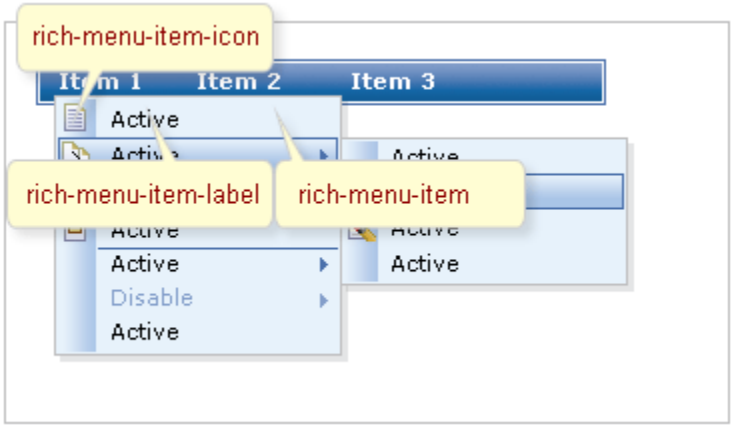


Figure 6.49. Class names

Table 6.144. Classes names that define an appearance of item elements

Class name	Description
rich-menu-item	Defines styles for a wrapper element for an item
rich-menu-item-label	Defines styles for a label of an item
rich-menu-item-icon	Defines styles for the left icon of an item

Table 6.145. Classes names that define different states

Class name	Description
rich-menu-item-disabled	Defines styles for a wrapper element of an item
rich-menu-item-enabled	Defines styles for a wrapper element of an enabled item
rich-menu-item-hover	Defines styles for a wrapper element of a hover item
rich-menu-item-label-disabled	Defines styles for a label of a disabled item
rich-menu-item-icon-disabled	Defines styles for the left icon of a disabled item
rich-menu-item-label-enabled	Defines styles for a label of an enabled item
rich-menu-item-icon-enabled	Defines styles for the left icon of an enabled item
rich-menu-item-label-selected	Defines styles for a label of a selected item
rich-menu-item-icon-selected	Defines styles for the left icon of a selected item

In order to redefine styles for all **<rich:menuItem>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:menuItem>** components, define your own style classes in the corresponding **<rich:menuItem>** attributes.

6.45.9. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/dropDownMenu.jsf?c=menuItem] you can see the example of **<rich:menuItem>** usage and sources for the given example.

6.46. < rich:menuSeparator >

6.46.1. Description

The **<rich:menuSeparator>** component is used for the definition of a horizontal separator that can be placed between groups or items.

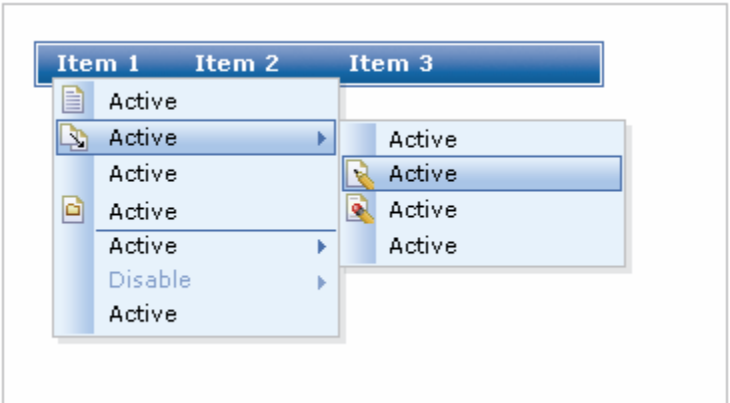


Figure 6.50. <rich:menuSeparator>

Table 6.146. rich : menuSeparator attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
id	Every component may have a unique id that is automatically created if omitted
rendered	If "false", this component is not rendered

Table 6.147. Component identification parameters

Name	Value
component-type	org.richfaces.MenuSeparator
component-class	org.richfaces.component.html.HtmlMenuSeparator
component-family	org.richfaces.DropDownMenu

Name	Value
renderer-type	org.richfaces.MenuSeparatorRenderer
tag-class	org.richfaces.taglib.MenuSeparatorTag

6.46.2. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:dropDownMenu/>
        ...
        <rich:menuSeparator/>
        ...
    <rich:dropDownMenu/>
...
```

6.46.3. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlMenuSeparator;
...
HtmlMenuSeparator myMenuSeparator = new HtmlMenuSeparator();
...
```

6.46.4. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:menuSeparator>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:menuSeparator>** component

6.46.5. Skin Parameters Redefinition

Table 6.148. Skin parameters redefinition for an item

Skin parameters	CSS properties
panelBorderColor	border-top-color

6.46.6. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

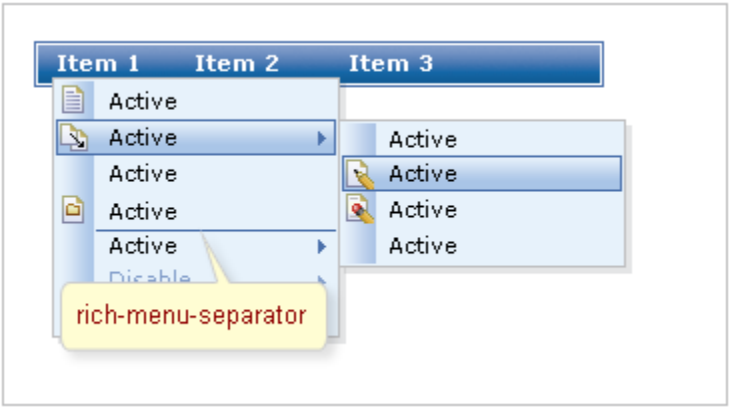


Figure 6.51. Classes names

Table 6.149. Classes names that define separator element appearance.

Class name	Description
rich-menu-separator	Defines styles for a wrapper element for a separator

In order to redefine styles for all **<rich:separator>** components on a page using CSS, it's enough to create class with the same name and define necessary properties in it.

To change styles of particular **<rich:separator>** components, define your own style class in the corresponding **<rich:separator>** attributes.

6.46.7. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/dropDownMenu.jsf?c=menuSeparator] you can see the example of **<rich:menuSeparator>** usage and sources for the given example.

6.47. < rich:effect >

6.47.1. Description

The rich:effect utilizes a set of effects provided by the scriptaculous JavaScript library. It allows to attach effects to JSF components and html tags.

6.47.2. Key Features

- No developers JavaScript writing needed to use it on pages
- Presents scriptaculous JavaScript library functionality

Table 6.150. rich : effect attributes

Attribute Name	Description
binding	

Attribute Name	Description
	The attribute takes a value-binding expression for a component property of a backing bean
disableDefault	Disable default action for target event (append "return false;" to javascript)
event	Event on the component or html tag the effect is attached to
for	Id of the target component.
id	Every component may have a unique id that is automatically created if omitted
name	Generated Javascript name.
params	Parameters passed to the effect function. Example params="{duration:0.2,from:1.0,to:0.1}"
rendered	If "false", this component is not rendered
targetId	The id of the element the effect apply to. Might be component id or client id of jsf component or html tag. If targetId is not defined the value of the attribute 'for' or the 'targetId' option effect play its role
type	Defines the type of effect. Possible values: "Fade", "Blind", "Opacity".

Table 6.151. Component identification parameters

Name	Value
component-type	org.richfaces.Effect
component-class	org.richfaces.component.html.HtmlEffect
component-family	org.richfaces.Effect
renderer-type	org.richfaces.EffectRenderer
tag-class	org.richfaces.taglib.EffectTag

6.47.3. Creating the Component with a Page Tag

To create the simplest variant of rich:effect on a page, use the following syntax:

Example:

```
...
<rich:effect for="componentId" type="Appear"/>
...
```

6.47.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlRichEffect;
...
HtmlRichEffect myEffect = new HtmlRichEffect();
...
```

6.47.5. Details of Usage

It is possible to use <rich:effect> in two modes:

- attached to the JSF components or html tags and triggered by a particular event. Wiring effect with JSF components might occur on the server or client. Wiring with html tag is possible only on the client side
- invoking from the JavaScript code by an effect name. During the rendering, rich:effect generates the JavaScript function with defined name. When the function is called, the effect is applied

Those a the typical variants of using:

```
...
<!-- attaching by event  -->
<rich:panel>
 <rich:effect event="onmouseout" type="Opacity" params="duration:0.8,from:1.0,to:0.3"
 />
    .... panel content ....
</rich:panel>
...

<!--  invoking from JavaScript -->
<div id="contentDiv">
  ..... div content ......
</div>

<input type="button" onclick="hideDiv({duration:0.7})" value="Hide" />
<input type="button" onclick="showDiv()" value="Show" />

<rich:effect  name="hideDiv"  for="contentDiv" type="Fade" />
<rich:effect  name="showDiv"  for="contentDiv" type="Appear" />

<!-- attaching to window on load and applying on particular page element -->
<rich:effect for="window" event="onload" type="Appear"
 params="targetId:'contentDiv',duration:0.8,from:0.3,to:1.0" />
...
```

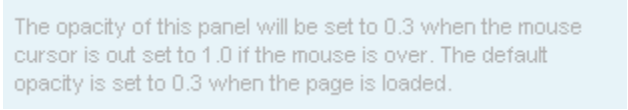


Figure 6.52. Initial:

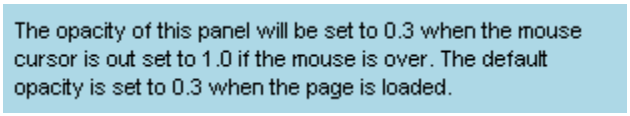


Figure 6.53. When the mouse cursor is over:

"name" attribute defines a name of the JavaScript function that is be generated on a page when the component is rendered. You can invoke this function to activate the effect. The function accesses one parameter. It is a set of effect options in JSON format.

"type" attribute defines the type of an effect. For example, "Fade", "Blind", "Opacity". Have a look at scriptaculous documentation [http://script.aculo.us] for set of available effect.

"for" attribute defines the id of the component or html tag, the effect will be attached to. Richfaces converts the *"for"* attribute value to the client id of the component if such component is found. If not, the value is left as is for possible wiring with on the DOM element's id on the client side. By default, the target of the effect is the same element that effect pointed to. However, the target element is might be overridden with *"targetId"* option passed with *"params"* attribute of with function paramenter.

"params" attribute allows to define the set of options possible for particurar effect. For example, 'duration', 'delay', 'from', 'to'. Additionally to the options used by the effect itself, there are two option that might override the rich:effect attribute. Those are:

- *"targetId"* allows to re-define the target of effect. The option is override the value of *"for"* attribute.
- *"type"* defines the effect type. The option is override the value of *"type"* attribute.

You can use a set of effects directly without defining the **<rich:effect>** component on a page if it's convenient for you. For that, load the scriptaculous library to the page with the following code:

Example:

```
...
<a4j:loadScript src="resource://scriptaculous/effect.js" />
...
```

If you do use the **<rich:effect>** component, there is no need to include this library because it's already here.

For more information look at RichFaces Users Forum [http://jboss.com/index.html?module=bb&op=viewtopic&t=119044].

6.47.6. Look-and-Feel Customization

<rich:effect> has no skin parameters and custom style classes, as the component isn't visual.

6.47.7. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/effect.jsf?c=effect] you can see the example of **<rich:effect>** usage.

How to save **<rich:effect>** status see on the RichFaces Users Forum [http://www.jboss.com/index.html?module=bb&op=viewtopic&t=118833].

6.48. < rich:gmap >

6.48.1. Description

Component that presents the Google map in the JSF applications.

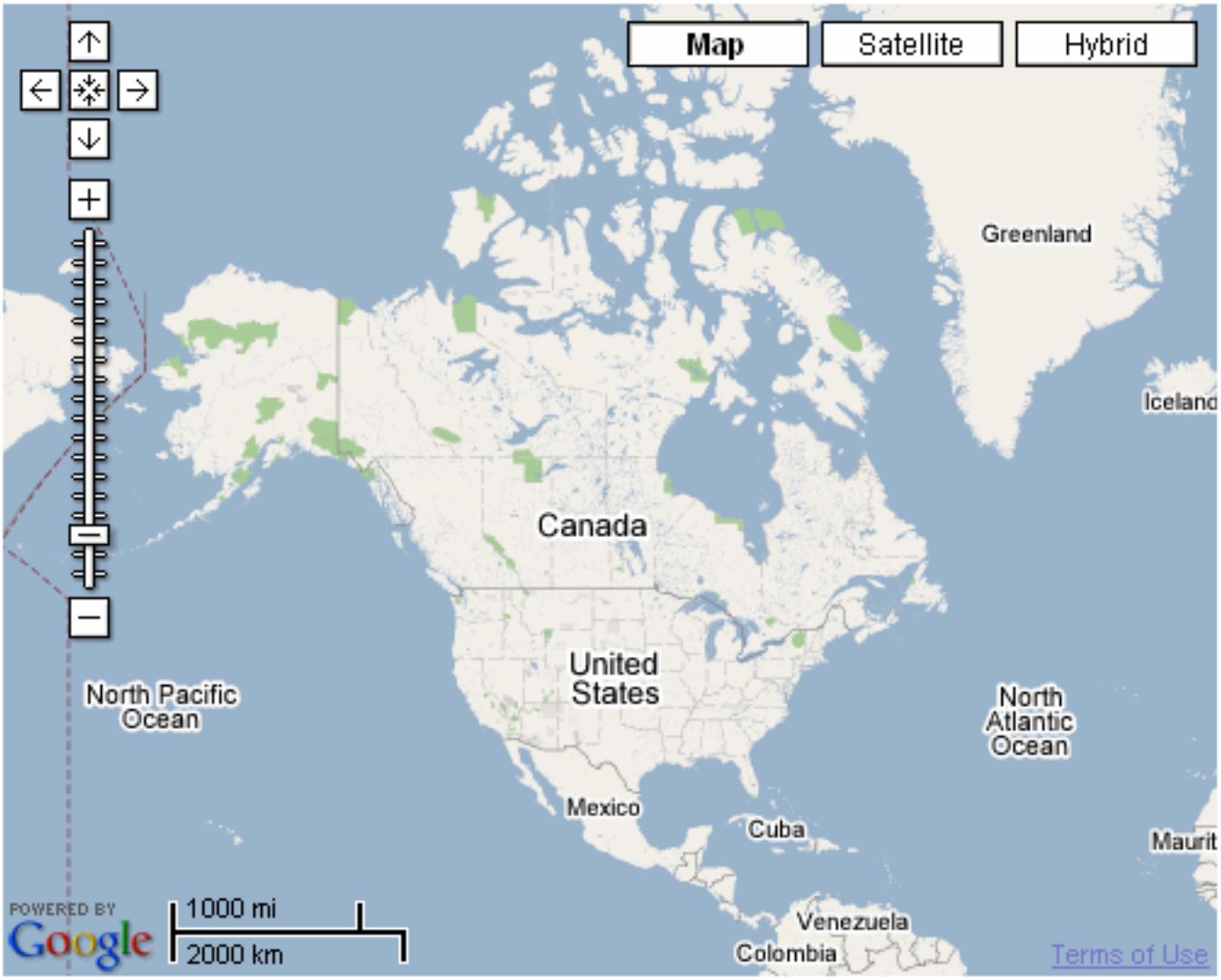


Figure 6.54. Gmap component

6.48.2. Key Features

- Presents all the Google map functionality
- Highly customizable via attributes
- No developers JavaScript writing needed to use on a pages

Table 6.152. rich : gmap attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
enableContinuousZoom	Enables continuous smooth zooming for selected browsers. The default value is "false"
enableDoubleClickZoom	Enables zooming in by a double click. The default value is "false"
enableDragging	Enables a map dragging with the mouse. The default value is "true"
enableInfoWindow	Enables Info Window. The default value is "true"
gmapKey	Google Map key. A single Maps API key is valid for a single "directory" on your web server
gmapVar	The JavaScript variable that is used to access the Google Map API. If you have more than one Google Map components on the same page, use individual key for each of them. The default variable name is "map" (without quotes)
id	Every component may have a unique id that is automatically created if omitted
lat	Initial latitude coordinate in degrees, as a number between -90 and +90
lng	Initial longitude coordinate in degrees, as a number between -180 and +180
mapType	Initial map type. The possible values are G_NORMAL_MAP, G_SATELLITE_MAP, G_HYBRID_MAP. The default value is G_SATELLITE_MAP
onclick	HTML: a script expression; a pointer button is clicked
ondblclick	HTML: a script expression; a pointer button is double-clicked
oninit	JavaScript code invoked just after the Google Map object is initiated.
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released

Attribute Name	Description
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
rendered	If "false", this component is not rendered
showGLargeMapControl	Shows the GLarge control. The default value is "true"
showGMapTypeControl	Shows the Type switch control. The default value is "true"
showGScaleControl	It shows the scale control. The default value is "true"
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
warningMessage	The warning message that appears if a browser is not compatible with Google Map. The default value is "Your browser does not support Google Maps"
zoom	Initial zoom level as a number between 1 and 18. The default value is 17

Table 6.153. Component identification parameters

Name	Value
component-type	org.richfaces.Gmap
component-class	org.richfaces.component.html.HtmlGmap
component-family	org.richfaces.Gmap
renderer-type	org.richfaces.GmapRenderer
tag-class	org.richfaces.taglib.GmapTag

6.48.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:gmap gmapKey="..."/>
...
```

6.48.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlGmap;
...
HtmlGmap myMap = new HtmlGmap();
...
```

6.48.5. Details of Usage

To use *Google Map* in your application, generate a key on Google Map official resource [http://google.com/apis/maps]. One key could be used for one directory on the server.

Here are the main settings of initial rendering performed with a component map that are accessible with the following attributes:

- *"zoom"* defines an approximation size (boundary values 1-18)
- *"lat"* specifies an initial latitude coordinate in degrees, as a number between -90 and +90
- *"lng"* specifies an initial longitude coordinate in degrees, as a number between -180 and +180
- *"mapType"* specifies a type of a rendered map (G_NORMAL_MAP, G_SATELLITE_MAP (DEFAULT), G_HYBRID_MAP)

For example, the city of Paris is shown after rendering with the following initial settings: *"lat"* = 48.44, *"lng"* = 2.24 and *"zoom"* = 5.

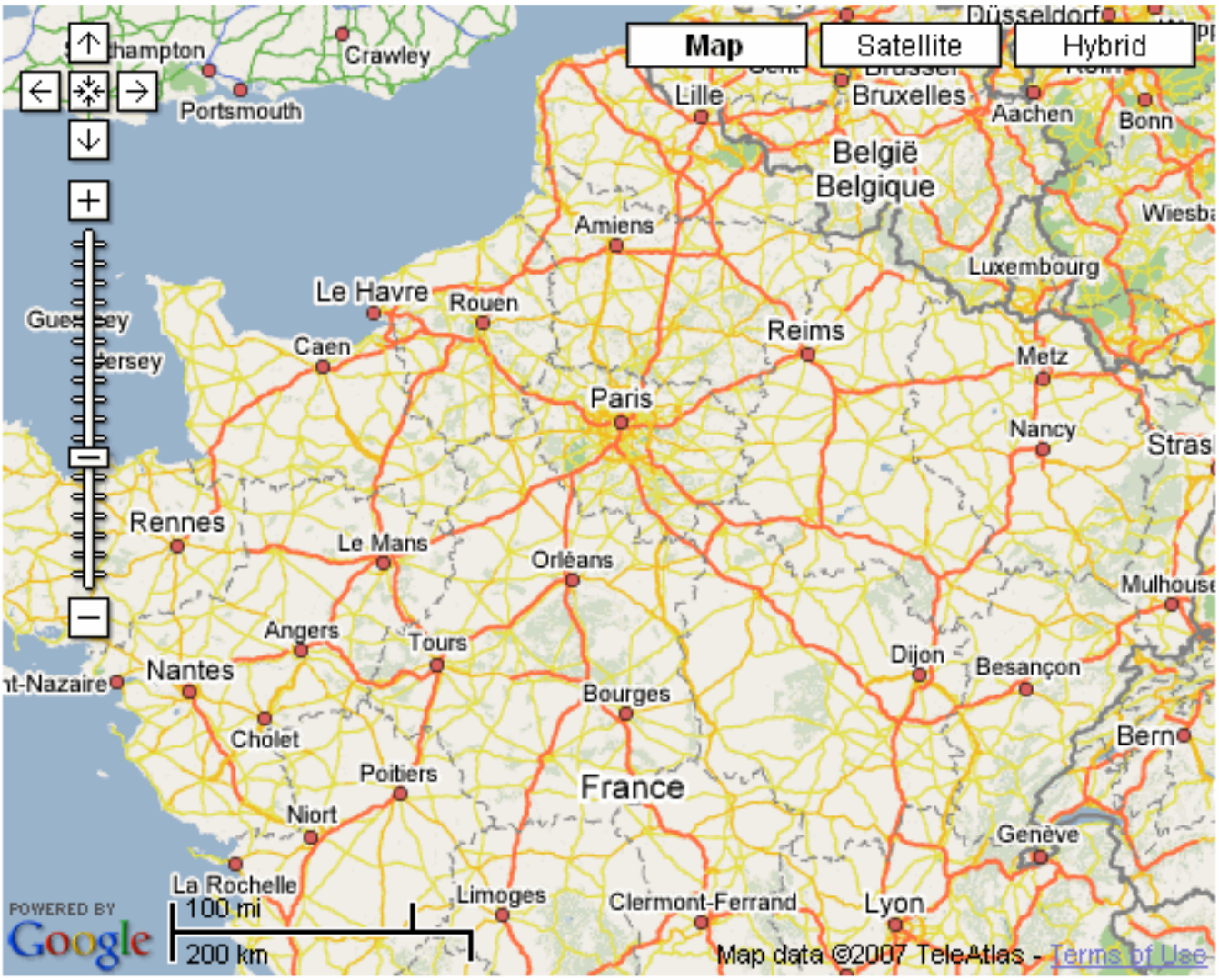


Figure 6.55. Gmap initial rendering

It's also possible to set accessible controls on the map with the help of the attributes:

- *"showGMapTypeControl"* determines whether the controls for a map type definition are switched on
- *"showGScaleControl"* determines whether the controls for scaling are switched on
- *"showGLargeMapControl"* determines whether the control for map scale rendering is rendered

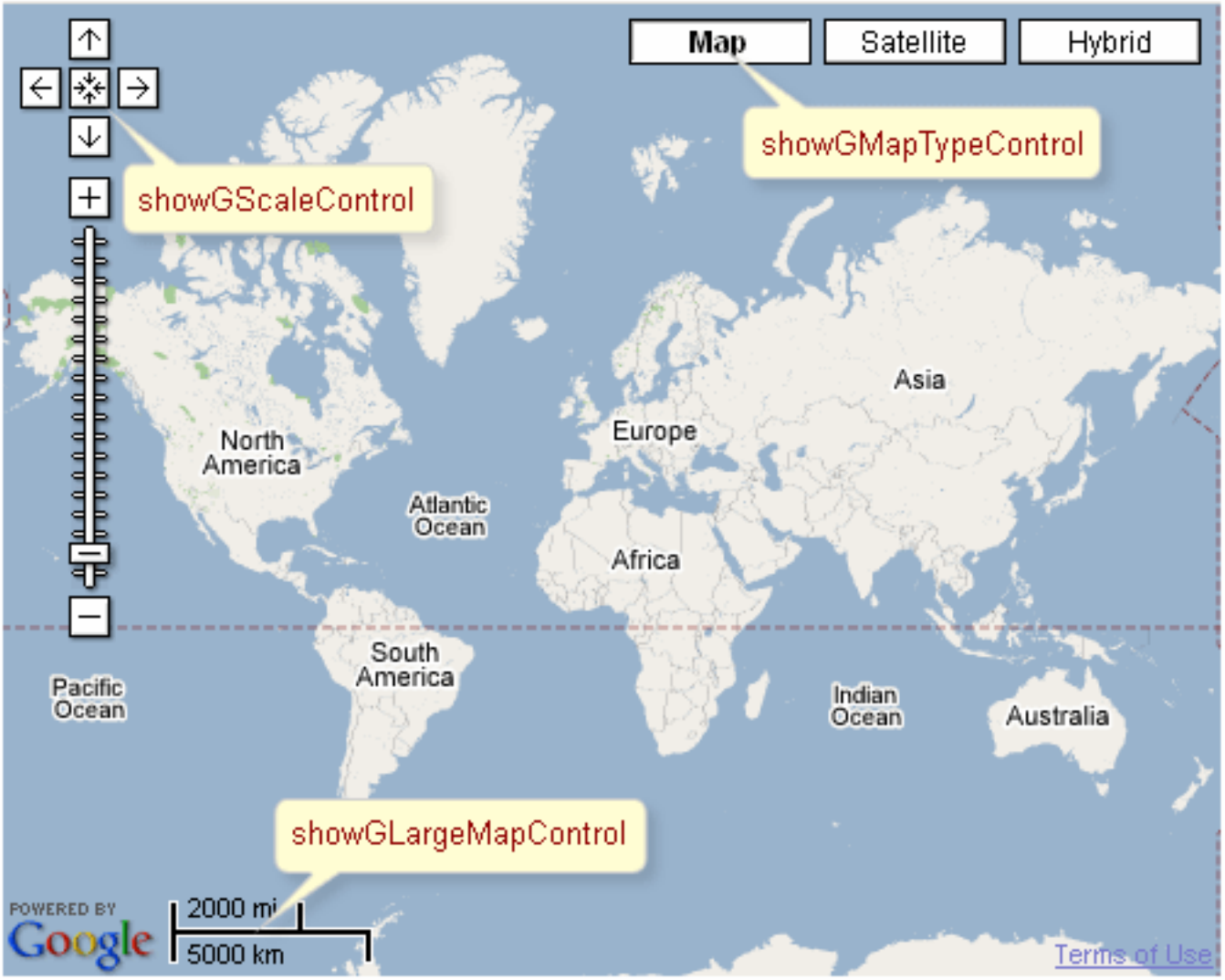


Figure 6.56. Gmap accessible controls

To set all these parameters and perform some activity (Zoom In/Out etc.) is possible with your JavaScript, i.e. declare a name of an object on a map in the *"gmapVar"* attribute and then call the object directly with API *Google Map.*

For example, to approximate a map for *"gmapVar"* = "map" declared inside the component, call map.zoomIn() on an event.

Moreover, to add e.g. some JavaScript effects, events defined on it are used.

- onmouseover
- onclick
- onmouseout
- etc.

6.48.6. Look-and-Feel Customization

<rich:gmap> component isn't tied to skin parameters, as there is no additional elements on it, except the ones provided with *Google Map*.

6.48.7. Definition of Custom Style Classes

Table 6.154. Classes names that define a component appearance

Class name	Description
rich-gmap	Defines styles for a wrapper element of a component

In order to redefine styles for all **<rich:gmap>** components on a page using CSS, it's enough to create class with the same name and define necessary properties in it.

To change styles of particular **<rich:gmap>** components, define your own style class in the corresponding **<rich:gmap>** attribute.

6.48.8. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/gmap.jsf?c=gmap] you can see the example of **<rich:gmap>** usage and sources for the given example.

6.49. < rich:virtualEarth >

6.49.1. Description

The component presents the Microsoft Virtual Earth map in the JSF applications.

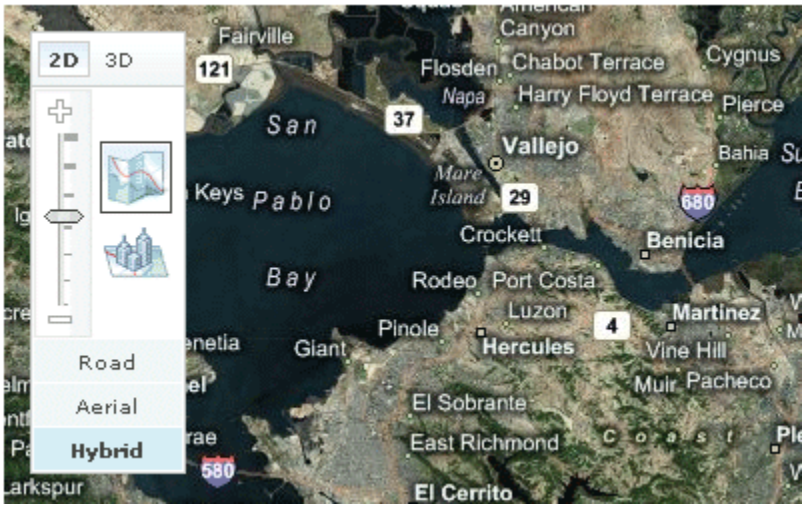


Figure 6.57. virtualEarth component

6.49.2. Key Features

- Presents the Microsoft Virtual Earth map functionality

- Highly customizable via attributes
- No developers JavaScript writing is needed to use it on a pages

Table 6.155. rich : virtualEarth attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
dashboardSize	Initial map type. The possible values are Normal,Small,Tiny. The default value is Normal
id	Every component may have a unique id that is automatically created if omitted
lat	Initial latitude coordinate in degrees, as a number between -90 and +90
lng	Initial longitude coordinate in degrees, as a number between -180 and +180
mapStyle	Navigation control size. The possible values are Road,Aerial,Hybrid,Birdseye. The default value is Road
onclick	HTML: a script expression; a pointer button is clicked
ondblclick	HTML: a script expression; a pointer button is double-clicked
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onLoadMap	JavaScript code invoked just after the Virtual Earth object is initiated.
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
rendered	If "false", this component is not rendered

Attribute Name	Description
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
var	The JavaScript variable that is used to access the Virtual Earth API. If you have more than one Virtual Earth components on the same page, use individual key for each of them. The default variable name is "map" (without quotes)
version	Virtual earth version, default - "6"
zoom	Initial zoom level as a number between 1 and 18. The default value is 17

Table 6.156. Component identification parameters

Name	Value
component-type	org.richfaces.VirtualEarth
component-class	org.richfaces.component.html.HtmlVirtualEarth
component-family	org.richfaces.VirtualEarth
renderer-type	org.richfaces.VirtualEarthRenderer
tag-class	org.richfaces.taglib.VirtualEarthTag

6.49.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:virtualEarth lat="..." lng="..."/>
...
```

6.49.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlVirtualEarth;
...
HtmlVirtualEarth myMap = new HtmlVirtualEarth();
...
```

6.49.5. Details of Usage

Here are the main settings of initial rendering performed with a component map that are accessible with the following attributes:

- *"zoom"* defines an approximation size (boundary values 1-18)
- *"lat"* specifies an initial latitude coordinate in degrees, as a number between -90 and +90
- *"lng"* specifies an initial longitude coordinate in degrees, as a number between -180 and +180
- *"dashboardSize"* specifies a type of a rendered map (Normal, Small, Tiny)

For example, the city of Paris is shown after rendering with the following initial settings: *"lat"* = 48.833, *"lng"* = 2.40 and *"zoom"* = 11.

Figure 6.58. virtualEarth initial rendering

Code for this example is placed below:
Example:

```
...
    <rich:virtualEarth  style="width:800px;" id="vm" lat="48.833" lng="2.40"
                                    dashboardSize="Normal"  zoom="11"
 mapStyle="Hybrid" var="map" />
...
```

To set all these parameters and perform some activity (Zoom In/Out etc.) is possible with your JavaScript, i.e. declare a name of an object on a map in the *"var"* attribute and then call the object directly with API *Microsoft Virtual Earth map.*

For example, to approximate a map for *"var"* = "map" declared inside the component, call map.ZoomIn() on an event.

Moreover, to add e.g. some JavaScript effects, events defined on it are used.

- onmouseover
- onclick

- onmouseout
- etc.

6.49.6. Look-and-Feel Customization

<rich:virtualEarth> component isn't tied to skin parameters, as there is no additional elements on it, except the ones provided with *Virtual Earth map*.

6.49.7. Definition of Custom Style Classes

Table 6.157. Classes names that define a component appearance

Class name	Description
rich-virtualEarth	Defines styles for a wrapper element of a component

In order to redefine styles for all **<rich:virtualEarth>** components on a page using CSS, it's enough to create class with the same name and define necessary properties in it.

To change styles of particular **<rich:virtualEarth>** components, define your own style class in the corresponding **<rich:virtualEarth>** attribute.

6.49.8. Relevant Resources Links

Here [http://msdn2.microsoft.com/en-us/library/bb429619.aspx] you can found additional information about Microsoft Virtual Earth map.

6.50. < rich:inputNumberSlider >

6.50.1. Description

A component that lets selecting a number from a numeric region. It's a horizontal aligned scroll-like control with its own input field (optional) present. The keyboard input in a field is possible (optional). Also it's possible to see the current value in the tooltip above a dragged handle control.

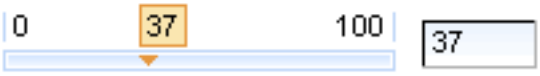


Figure 6.59. InputNumberSlider component

6.50.2. Key Features

- Fully skinnable control and input elements
- Optional value text field with an attribute-managed position
- Optional disablement of the component on a page
- Optional ToolTip to display the current value while a handle is dragged

- Dragged state is stable after the mouse moves
- Optional manual input possible if a text input field is present
- Validation of manual input

Table 6.158. rich : inputNumberSlider attributes

Attribute Name	Description
accesskey	This attribute assigns an access key to an element. An access key is a single character from the document character set. Note: Authors should consider the input method of the expected reader when specifying an accesskey
barClass	A name of CSS class for the bar element
barStyle	Style for a slider control line
binding	The attribute takes a value-binding expression for a component property of a backing bean
converter	Id of Converter to be used or reference to a Converter
converterMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the converter message, replacing any message that comes from the converter
disabled	When set for a form control, this boolean attribute disables the control for user input
enableManualInput	False value for this attribute makes a text field "read-only", so the value can be changed only from a handle
handleClass	A name of CSS class for a control handle element
handleSelectedClass	A name of CSS class for a selected control handle element
id	Every component may have a unique id that is automatically created if omitted
immediate	A flag indicating that this component value must be converted and validated immediately (that is, during Apply Request Values phase), rather than waiting until a Process Validations phase
inputClass	Style Class attribute for a text field
inputPosition	If "right" the InputText Box would be rendered on the right side of the ruler
inputSize	Similar to the "Size" attribute of h:inputText

Attribute Name	Description
inputStyle	Style attribute for text field
maxlength	When the type attribute has the value "text" or "password", this attribute specifies the maximum number of characters the user may enter. This number may exceed the specified size, in which case the user agent should offer a scrolling mechanism. The default value for this attribute is an unlimited number
maxValue	Attribute to set an "end" value
minValue	Attribute to set a "start" value
onblur	HTML: script expression; the element lost the focus
onchange	HTML: script expression; the element value was changed
onclick	HTML: a script expression; a pointer button is clicked
ondblclick	HTML: a script expression; a pointer button is double-clicked
onerror	This error is called when a non-number value or a number value that is out of the range is input
onfocus	HTML: script expression; the element got the focus
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
onselect	HTML: script expression; The onselect event occurs when a user selects some text in a text field. This attribute may be used with the INPUT and TEXTAREA elements
rendered	If "false", this component is not rendered

Attribute Name	Description
required	If "true", this component is checked for non-empty input
requiredMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the validation message for the "required" facility, if the "required" facility is used
showBoundaryValues	If the min/max values are shown on the right/left borders of a control. Default=true
showInput	False value for this attribute makes text a field invisible
showToolTip	If the current value will be shown in the tooltip when a handle control in a "dragged" state.Default=true.
step	Parameter that determines a step between the nearest values while using a handle
style	Styles for main div element of the slider control
styleClass	Name of a CSS class
tabindex	This attribute specifies the position of the current element in the tabbing order for the current document. This value must be a number between 0 and 32767. User agents should ignore leading zeros
tipClass	A name of CSS class for the tool tip element
tipStyle	A style for the tool tip element
validator	MethodBinding pointing at a method that is called during Process Validations phase of the request processing lifecycle, to validate the current value of this component
validatorMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the validator message, replacing any message that comes from the validator
value	The initial value to set when rendered for the first time
valueChangeListener	Listener for value changes
width	The width of a slider control

Table 6.159. Component identification parameters

Name	Value
component-type	org.richfaces.inputNumberSlider

Name	Value
component-class	org.richfaces.component.html.HtmlInputNumberSlider
component-family	org.richfaces.inputNumberSlider
renderer-type	org.richfaces.InputNumberSliderRenderer
tag-class	org.richfaces.taglib.InputNumberSliderTag

6.50.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:inputNumberSlider minValue="0" maxValue="100" step="1"/>
...
```

6.50.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlInputNumberSlider;
...
HtmlInputNumberSlider mySlider = new HtmlInputNumberSlider();
...
```

6.50.5. Details of Usage

<rich:inputNumberSlider> is used to facilitate your data input with rich UI Controls.

Here is the simplest variant of a slider definition with *"minValue"*, *"maxValue"* and *"step"* (on default = "1") attributes, which define the beginning and the end of a numerical area and a slider property step.

Example:

```
<rich:inputNumberSlider></rich:inputNumberSlider>
```

It generates on a page:

Figure 6.60. Generated inputNumberSlider

Using *"showInput"* (default is true) and *"enableManualInput"* (default value is true) attributes, it's possible to output the input area near the slider, and make it read-only or editable.

To remove input area use *"showInput="false"* :

Example:

```
<rich:inputNumberSlider minValue="1"  maxValue="100" showInput="false"/>
```

It looks at page like:

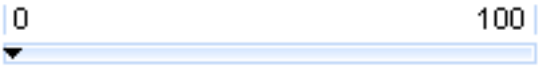


Figure 6.61. InputNumberSlider without input field

It's also possible to switch off displaying of "boundary values" and a tooltip showing on a handle drawing. This could be performed with the help of the component defined attributes: *"showBoundaryValues"* which is responsible for "boundary values" displaying (default is true) and *"showToolTip"* which is responsible for tooltip displaying (default is true).

Moreover, to add e.g. some JavaScript effects, events defined on it are used.

- onchange
- onmouseover
- onclick
- onfocus
- onmouseout
- etc.

6.50.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:inputNumberSlider>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:imputNumberSlider>** component

6.50.7. Skin Parameters Redefinition

Table 6.160. Skin parameters redefinition for a bar

Skin parameters	CSS properties
controlBackgroundColor	background-color

Table 6.161. Skin parameters redefinition for numbers

Skin parameters	CSS properties
generalFamilyFont	font-family
generalSizeFont	font-size
generalTextColor	color
panelBorderColor	border-color
generalSizeFont	line-height

Table 6.162. Skin parameters redefinition for a text field

Skin parameters	CSS properties
controlBackgroundColor	background-color
generalFamilyFont	font-family
generalSizeFont	font-size
controlTextColor	color
panelBorderColor	border-color
subBorderColor	border-bottom-color
subBorderColor	border-right-color

Table 6.163. Skin parameters redefinition for a hint

Skin parameters	CSS properties
tipBackgroundColor	background-color
tipBorderColor	border-color
generalFamilyFont	font-family
generalSizeFont	font-size

6.50.8. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

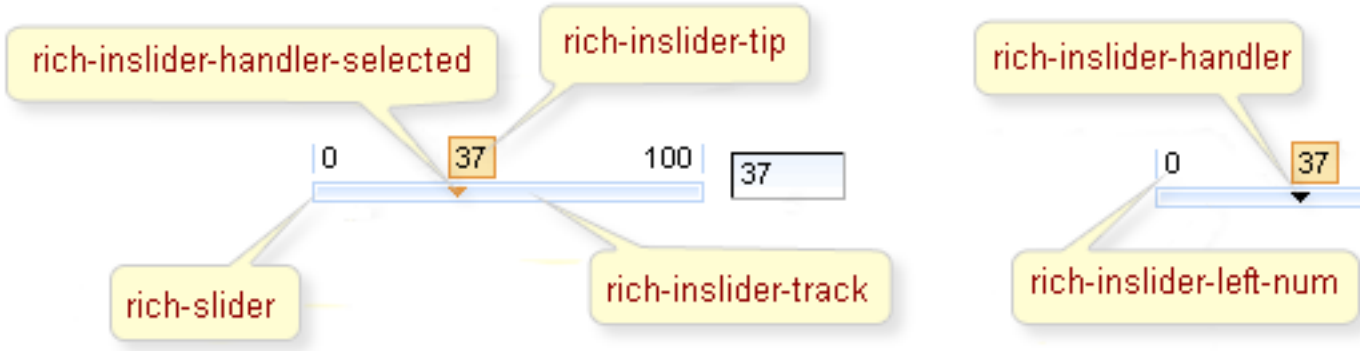


Figure 6.62. Style classes

Table 6.164. Classes names that define a component appearance

Class name	Description
rich-slider	Defines styles for a wrapper table element of a component
rich-inslider-track	Defines styles for a bar
rich-inslider-handler	Defines styles for a slider handler
rich-inslider-handler-selected	Defines styles for a selected handler
rich-inslider-field	Defines styles for a text field
rich-inslider-right-num	Defines styles for the right number
rich-inslider-left-num	Defines styles for the left number
rich-inslider-tip	Defines styles for a hint

In order to redefine styles for all **<rich:inputNumberSlider>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:inputNumberSlider>** components, define your own style classes in the corresponding **<rich:inputNumberSlider>** attributes.

CSS code piece used on a page:

Example:

```
...
    .rich-slider-handle{
        border:2px solid;
    }
    .myClass{
```

```
        font-style:italic;
    }
...
```

The component is defined in the following way:

Example:

```
<rich:inputNumberSlider ... inputClass="myClass" .../>
```

Hence, header border width of all sliders is redefined on a page as well as a style font for an input field of a particular slider.

6.50.9. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/inputNumberSlider.jsf?c=inputNumberSlider] you can see the example of **<rich:inputNumberSlider>** usage and sources for the given example.

6.51. < rich:inputNumberSpinner >

6.51.1. Description

A single line input field that lets selecting a number using controls near a text field. It's possible to change a value using "Up/Down" keyboard keys. The keyboard input in a field is possible if it isn't locked by the *"manualInput"* attribute. When arrow controls are pressed, the cursor can be moved in any way without losing a dragged state.

Figure 6.63. InputNumberSpinner component

6.51.2. Key Features

- Fully skinnable control and input elements
- 3D look and feel with an easily customizable appearance
- Attribute-managed positions of the controls (inside/outside of the input field)
- Keyboard controls support
- Optional disablement of the component on a page
- Optional *"cycled"* mode of scrolling values
- Optional manual/controls-only input into a value text field
- Validation of manual input

Table 6.165. rich : inputNumberSpinner attributes

Attribute Name	Description
accesskey	This attribute assigns an access key to an element. An access key is a single character from the document character set. Note: Authors should consider the input method of the expected reader when specifying an accesskey
binding	The attribute takes a value-binding expression for a component property of a backing bean
converter	Id of Converter to be used or reference to a Converter
converterMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the converter message, replacing any message that comes from the converter
cycled	If "true" after the current value reaches the border value it is reversed to another border value after next increasing/decreasing. In other case possibilities of next increasing (or decreasing) will be locked
disabled	When set for a form control, this boolean attribute disables the control for user input
enableManualInput	if "false" user's input to the text field using keyboard will be locked
id	Every component may have a unique id that is automatically created if omitted
immediate	A flag indicating that this component value must be converted and validated immediately (that is, during Apply Request Values phase), rather than waiting until a Process Validations phase
inputClass	Class attribute for text field
inputSize	Attribute specifies the initial length of input in characters. Default value is 10
inputStyle	Style attribute for text field
maxValue	Maximum value
minValue	Minimum value
onblur	HTML: script expression; the element lost the focus
onchange	HTML: script expression; the element value was changed

Attribute Name	Description
onclick	HTML: a script expression; a pointer button is clicked
ondblclick	HTML: a script expression; a pointer button is double-clicked
ondownclick	HTML: a script expression; a button "Down" is clicked
onerror	HTML: a script expression; event fires whenever an JavaScript error occurs
onfocus	HTML: script expression; the element got the focus
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
onselect	HTML: script expression; The onselect event occurs when a user selects some text in a text field. This attribute may be used with the INPUT and TEXTAREA elements
onupclick	HTML: a script expression; a button "Up" is clicked
rendered	If "false", this component is not rendered
required	If "true", this component is checked for non-empty input
requiredMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the validation message for the "required" facility, if the "required" facility is used
step	Parameter that determines the step between nearest values while using controls
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute

Attribute Name	Description
tabindex	This attribute specifies the position of the current element in the tabbing order for the current document. This value must be a number between 0 and 32767. User agents should ignore leading zeros
validator	MethodBinding pointing at a method that is called during Process Validations phase of the request processing lifecycle, to validate the current value of this component
validatorMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the validator message, replacing any message that comes from the validator
value	The initial value to set when rendered for the first time
valueChangeListener	Listener for value changes

Table 6.166. Component identification parameters

Name	Value
component-type	org.richfaces.inputNumberSpinner
component-class	org.richfaces.component.html.HtmlInputNumberSpinner
component-family	org.richfaces.inputNumberSpinner
renderer-type	org.richfaces.InputNumberSpinnerRenderer
tag-class	org.richfaces.taglib.InputNumberSpinnerTag

6.51.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:inputNumberSpinner minValue="0" maxValue="100" step="1"/>
...
```

6.51.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlInputNumberSpinner;
...
HtmlInputNumberSpinner mySpinner = new HtmlInputNumberSpinner ();
...
```

6.51.5. Details of Usage

<rich:inputNumberSpinner> is used to facilitate your data input with rich UI Controls.

Here is the simplest variant of spinner definition with *"minValue"*, *"maxValue"* and *"step"* (on default = "1") attributes, which define the beginning and the end of numerical area and a spinner step.

Example:

```
...
    <rich:inputNumberSpinner minValue="1" maxValue="100"/>
...
```

It generates on a page:

Figure 6.64. Generated inputNumberSpinner

There are also several attributes to define functionality peculiarities:

- *"cycled"* if the attribute is *"true"* after the current value reaches the border value it's be reversed to another border value after next increasing/decreasing. In other case possibilities of next increasing/decreasing are locked
- *"disabled"* is an attribute that defines whether a component is active on a page
- *"manualInput"* is an attribute that defines whether a keyboard input is possible or only UI controls could be used

Moreover, to add e.g. some JavaScript effects, events defined on it are used

- onchange
- onmouseover
- onclick
- onfocus
- onmouseout
- etc.

6.51.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:inputNumberSpinner>** components at once:

- Redefine the corresponding skin parameters

- Add to your style sheets *style classes* used by a **<rich:inputNumberSpinner>** component

6.51.7. Skin Parameters Redefinition

Table 6.167. Skin parameters redefinition for a container

Skin parameters	CSS properties
controlBackgroundColor	background-color
panelBorderColor	border-color
subBorderColor	border-bottom-color
subBorderColor	border-right-color

Table 6.168. Skin parameters redefinition for an input field

Skin parameters	CSS properties
buttonSizeFont	font-size
buttonFamilyFont	font-family

6.51.8. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

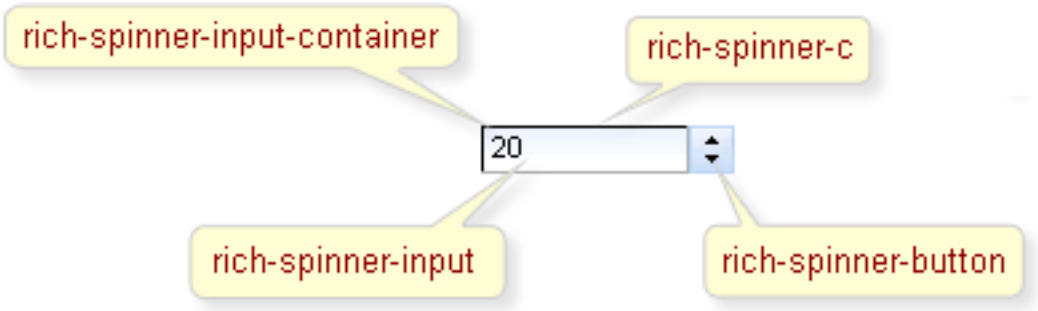


Figure 6.65. Style classes

Table 6.169. Classes names that define a component appearance

Class name	Description
rich-spinner-c	Defines styles for a wrapper table element of a component
rich-spinner-input-container	Defines styles for a container
rich-spinner-input	Defines styles for an input field
rich-spinner-button	Defines styles for a button

In order to redefine styles for all **<rich:inputNumberSpinner>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:inputNumberSpinner>** components, define your own style classes in the corresponding **<rich:inputNumberSpinner>** attributes.

CSS code piece used on a page:

Example:

```
...
    . rich-spinner-input {
            font-style:italic;
        }
    .myClass {
            font-weight: bold;
        }
...
```

The component is defined in the following way:

Example:

```
<rich:inputNumberSpinner inputClass="myClass" .../>
```

Hence, a font-style of all spinners is redefined on a page as well as a font-weight for an entry field of the particular spinner.

6.51.9. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/inputNumberSpinner.jsf?c=inputNumberSpinner] you can see the example of **<rich:inputNumberSpinner>** usage and sources for the given example.

6.52. < rich:insert >

6.52.1. Description

The **<rich:insert>** component is used for highlighting, source code inserting and, optionally, format the file from the application context into the page.

6.52.2. Key Features

- Source code highlighting
- Variety of formats for source code highlighting

Table 6.170. rich : insert attributes

Attribute Name	Description
binding	

Attribute Name	Description
	The attribute takes a value-binding expression for a component property of a backing bean
encoding	Attribute defines encoding for inserted content
errorContent	Attribute defines the alternative content that will be shown in case component cannot read the resource defined with 'src' attribute. If "errorContent" attribute is not defined, the component shown the actual error message in the place where the content is expected
highlight	Defines a type of code
id	Every component may have a unique id that is automatically created if omitted
rendered	If "false", this component is not rendered
src	Defines the path to the file with source code

Table 6.171. Component identification parameters

Name	Value
component-type	org.richfaces.ui.Insert
component-class	org.richfaces.ui.component.html.HtmlInsert
component-family	org.richfaces.ui.Insert
renderer-type	org.richfaces.ui.InsertRenderer
tag-class	org.richfaces.ui.taglib.InsertTag

6.52.3. Creating the Component with a Page Tag

To create the simplest variant on a page use the following syntax:

Example:

```
...
      <rich:insert  src="/pages/sourcePage.xhtml" highlight="xhtml"/>
...
```

6.52.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.ui.component.html.HtmlInsert;
...
HtmlInsert myInsert = new HtmlInsert();
...
```

6.52.5. Details of Usage

The are two basic attributes. The *"src"* attribute defines the path to the file with source code. The *"highlight"* attribute defines the type of a syntax highlighting.

If *"highlight"* attribute is defined and JHighlight [https://jhighlight.dev.java.net/] open source library is in the classpath, the text from the file will be formated and colorized.

An example is placed below.

Example:

```
...
      <rich:insert  src="/pages/sourcePage.xhtml" highlight="xhtml"/>
...
```

The result of using **<rich:insert>** component is shown on the picture:

```
<ui:composition xmlns="http://www.w3.org/1999/xhtml"
    xmlns:ui="http://java.sun.com/jsf/facelets"
    xmlns:h="http://java.sun.com/jsf/html"
    xmlns:a4j="http://richfaces.org/a4j"
    xmlns:rich="http://richfaces.org/rich">

<h:form>
  <rich:panel>
    <a4j:commandButton value="Set Name to Alex"  reRender="rep" >
      <a4j:actionparam name="username" value="Alex" assignTo="#{userBean.name}"/>
    </a4j:commandButton>
    <rich:spacer width="20" />
    <a4j:commandButton value="Set Name to John"  reRender="rep" >
      <a4j:actionparam name="username" value="John" assignTo="#{userBean.name}"/>
    </a4j:commandButton>
  </rich:panel>
  <rich:panel>
    <h:outputText id="rep" value="Selected Name:#{userBean.name}"/>
  </rich:panel>
</h:form>
</ui:composition>
```

Figure 6.66. Source code highlighting

The **<rich:insert>** component provides the same functionalitity as JHighlight [https://jhighlight.dev.java.net/]. Thus, all names of highlight style classes for source code of particular language could be changed to your names, wich are used by the JHighlight [https://jhighlight.dev.java.net/] library.

6.52.6. Look-and-Feel Customization

<rich:insert> has no skin parameters and custom style classes, as the component doesn't have own visual representation.

6.52.7. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/insert.jsf?c=insert] you can see the example of **<rich:insert>** usage and sources for the given example.

6.53. < rich:jQuery >

6.53.1. Description

The **<rich:jQuery>** allows to apply styles and behaviour to DOM objects.

6.53.2. Key Features

- Presents jQuery JavaScript framework functionality
- Allows to apply onto JSF components and other DOM objects.
- Works without conflicts with prototype.js library

Table 6.172. rich : jQuery attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
id	Every component may have a unique id that is automatically created if omitted
name	The name of the function that will be generated to execute the query. The name attribute is required if timing attribute equals to "onJScall"
query	The query string that will be executed for given selector.
rendered	If "false", this component is not rendered
selector	Selector for query. The "selector" attribute uses defined by w3c consortium syntax for CSS rule selector with some jQuery extensions.
timing	When to peform the query. Two possible values are "immediate","onload" and "onJScall". "immediate" performs the query right away. "onload" adds the task to the time when document is loaded (the DOM tree is created). "onJScall" allows to invoke the query by Javascipt function name defined with "name" attribute. The default value is "immediate".

Table 6.173. Component identification parameters

Name	Value
component-type	org.richfaces.JQuery
component-class	org.richfaces.component.html.HtmlJQuery

Name	Value
component-family	org.richfaces.JQuery
renderer-type	org.richfaces.JQueryRenderer
tag-class	org.richfaces.taglib.JQueryTag

6.53.3. Creating the Component with a Page Tag

To create the simplest variant on a page, use the following syntax:

Example:

```
...
      <rich:jQuery selector="#customList tr:odd" timing="onload"
 query="addClass(odd)" />
...
```

6.53.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlJQuery;
...
HtmlJQuery myJQuery = new HtmlJQuery();
...
```

6.53.5. Details of Usage

<rich:jQuery> can be used in two main modes:

- as a one-time query applied immediately or on a document ready event
- as a JavaScript function that can be invoked from the JavaScript code

The mode is chosen with *"timing"* attribute that has the following options:

- immediate - applying a query immediately
- onload - applying a query when a document is loaded
- onJScall - applying a query by invoked JavaScript function defined with the *"name"* attribute

Definition of the *"name"* attribute is mandatory when the value of *"timing"* attribute is "onJScall". If the *"name"* attribute is defined when *"timing"* value equals to "immediate" or "onload", the query is applied according to this value, but you still have an opportunity to invoke it by a function name.

The *"selector"* attribute defines an object or a list of objects. The query is defined with the *"query"* attribute.

Here is an example of how to highlight odd rows in a table:

Example:

```
...
    <style>
        .odd {
                background-color: #FFC;
        }
    </style>
    ...

    <rich:table id="customList" ...>
        ...
    </rich:table>
    ...
    <rich:jQuery selector="#customList tr:odd" timing="onload" query="addClass(odd)"
 />
...
```

The *"selector"* attribute uses defined by w3c consortium syntax for CSS rule selector [http://www.w3.org/TR/REC-CSS2/selector.html] with some jQuery extensions.

Those are typical examples of using selector in the **<rich:jQuery>** component.

Table 6.174. Examples of using selector

Selector	Comment
"p[a]"	In a document all "p" tags with "a" tag inside are selected
"ul/li"	All "li" elements of unordered "ul" lists are selected
"p.foo[a]"	All "p" tags with "foo" class and inserted "a" tag are selected
"input[@name=bar]"	All "input" tags with "name" attribute which value is "bar" are selected
"input[@type=radio][@checked]"	All "input" tags with attribute "type"="radio" and attribute value = "chekced" are selected
"p,span,td"	All tag elements "p" or"span" or "td" are selected
"p#secret"	"p" paragraph element with "id" identification = "secret" is selected
"p span"	"span" tag is a (direct or non-direct) child of "p" tag. If it's necessary, use "p > span" or "p/span" is selected
"p[@foo^=bar]"	"p" tag containing "foo" attribute with textual value beginning with "bar" word is selected
"p[@foo$=bar] "	"p" tag containing "foo" attribute with textual value ending with "bar" word is selected

Selector	Comment
"p[@foo*=bar] "	"p" tag with "foo" attribute containing substring "bar" in any place is selected
"p//span "	"span" tag that is a (direct or non-direct) child of "p" tag is selected
"p/../span "	"span" tag that is a grandchild of "p" tag is selected

In addition, RichFaces allows using either a component id or client id if you apply the query to a JSF component. When you define a selector, RichFaces examines its content and tries to replace the defined in the selector id with component id if it's found.

For example, you have the following code:

```
...
    <h:form id="form">
        ...
        <h:panelGrid id="menu">
            <h:graphicImage ... />
            <h:graphicImage ... />
            ...
        </h:panelGrid>
    </h:form>
...
```

The actual id of the **<h:panelGrid>** table in the browser DOM is "form:menu". However, you still can reference to images inside this table using the following selector:

```
...
    <rich:jQuery selector="#menu img" query="..." />
...
```

You can define the exact id in the selector if you want. The following code reference to the same set of a DOM object:

```
...
    <rich:jQuery selector="#form\\:menu img" query="..." />
...
```

Pay attention to double slashes that escape a colon in the id.

In case when the *"name"* attribute is defined, **<rich:jQuery>** generates a JavaScript function that might be used from any place of JavaScript code on a page.

There is an example of how to enlarge the picture smoothly on mouse over event and return back to the normal size on mouse out:

```
...
    <h:graphicImage onmouseover="enlargePic(this)" width="50"
 value="/images/price.gif"
```

```
                onmouseover="enlargePic(this, {pwidth:'60px'})"
 onmouseover="releasePic(this)"  />
    <h:graphicImage onmouseover="enlargePic(this)" width="50"
 value="/images/discount.gif"
                onmouseover="enlargePic(this, {pwidth:'100px'})"
 onmouseover="releasePic(this)"  />
    ...
    <rich:jQuery name="enlargePic" timing="onJScall"
 query="animate({width:param.pwidth})" />
    <rich:jQuery name="releasePic" timing="onJScall"
 query="animate({width:'50px'})"/>
...
```

The JavaScript could use two parameters. The first parameter is a replacement for the selector attribute. Thus, you can share the same query, applying it to the different DOM objects. You can use a literal value or a direct reference for an existing DOM object. The second parameter can be used to path the specific value inside the query. The JSON syntax is used for the second parameter. The "param." namespace is used for referencing data inside the parameter value.

<rich:jQuery> adds styles and behavior to the DOM object dynamically. This means if you replace something on a page during an Ajax response, the applied artifacts will be overwritten. You are resistible to apply them again after the Ajax response is complete.

Usually, it could be done with reRendering the **<rich:jQuery>** components in the same Ajax interaction with the components these queries are applied to. Note, that queries with *"timing"* attribute set to "onload" are not invoked even the query is reRendered, because a DOM document is not fully reloaded during the Ajax interaction. If you need to re-applies query with "onload" value of *"timing"* attribute , define the *"name* attribute and invoke the query by name in the *"oncomplete"* attribute of the Ajax component.

RichFaces includes jQuery JavaScript framework. You can use the futures of jQuery directly without defining the **<rich:jQuery>** component on a page if it is convenient for you. To start using the jQuery feature on the page, include the library to the page with the following code:

```
...
    <a4j:loadScript src="resource://jquery.js"/>
...
```

Refer to the jQuery documentation [http://docs.jquery.com/] for the right sintax. Remember to use jQuery() function instead of $(), as soon as jQuery works without conflicts with prototype.js.

6.53.6. Look-and-Feel Customization

<rich:jQuery> has no skin parameters and custom style classes, as the component isn't visual.

6.53.7. Relevant Resources Links

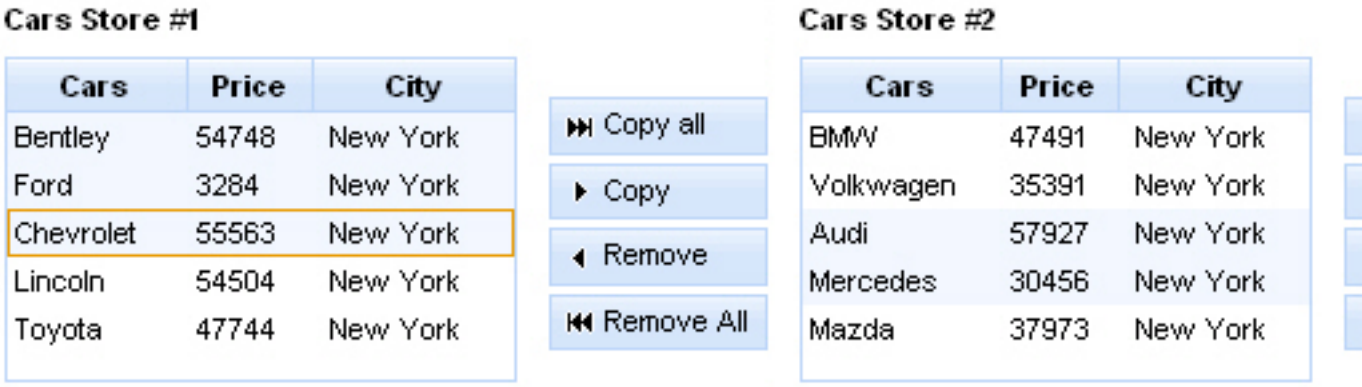
More information about jQuery framework and its features you can read here [http://jquery.com/].

How to use jQuery with other libraries see here [http://docs.jquery.com/Using_jQuery_with_Other_Libraries].

6.54. < rich:listShuttle >

6.54.1. Description

The **<rich:listShuttle>** component is used for moving chosen items from one list into another with their optional reordering there.



6.54.2. Key Features

- Highly customizable look and feel
- Reordering and sorting possibilities for lists items
- Multiple selection of lists items
- Keyboard support

Table 6.175. rich : listShuttle attributes

Attribute Name	Description
activeItem	Stores active item
ajaxKeys	Defines strings that are updated after an Ajax request
binding	The attribute takes a value-binding expression for a component property of a backing bean
bottomControlClass	CSSÂ classÂ forÂ bottomÂ control
bottomControlLabel	Defines a label for a bottom control
columnClasses	Comma-separated list of CSS classes for columns
componentState	It defines EL-binding for a component state for saving or redefinition
controlsType	Defines type of a control: button or none.
converter	Id of Converter to be used or reference to a Converter
copyAllControlClass	CSSÂ classÂ forÂ copy allÂ control

Attribute Name	Description
copyAllControlLabel	Defines a label for a copyAll control
copyControlClass	CSSÂ classÂ forÂ copyÂ control
copyControlLabel	Defines a label for a copy control
disabledControlClass	CSS class for a disabled control
downControlClass	CSSÂ classÂ forÂ downÂ control
downControlLabel	Defines a label for a down control
fastMoveControlsVisible	If "false", 'Copy All' and 'Remove All' controls aren't displayed
fastOrderControlsVisible	If "false", 'Top' and 'Bottom' controls aren't displayed.
first	A zero-relative row number of the first row to display
id	Every component may have a unique id that is automatically created if omitted
immediate	True means, that the default ActionListener should be executed immediately (i.e. during Apply Request Values phase of the request processing lifecycle), rather than waiting until the Invoke Application phase
listClass	CSSÂ classÂ forÂ aÂ list
listsHeight	Defines height of the list
moveControlsVerticalAlign	CustomizesÂ verticallyÂ aÂ positionÂ ofÂ move/copyÂ controlsÂ relativelyÂ toÂ lists
moveControlsVisible	If "false", 'Copy' and 'Remove' controls aren't displayed
onbottomclick	A JavaScript event handler; a button "Bottom" is clicked
onclick	HTML: a script expression; a pointer button is clicked
oncopyallclick	A JavaScript event handler; a button "Copy All" is clicked
oncopyclick	HTML: a script expression; a button "Copy" is clicked
ondblclick	HTML: a script expression; a pointer button is double-clicked
ondownclick	A JavaScript event handler; a button "Down" is clicked
onlistchanged	A JavaScript event handler called on a list change operation

Attribute Name	Description
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onorderchanged	HTML: Â script Â expression; calledÂ afterÂ orderingÂ action
onremoveallclick	A JavaScript event handler; a button "Remove All" is clicked
onremoveclick	A JavaScript event handler; a button "Remove" is clicked
ontopclick	A JavaScript event handler; a button "Top" is clicked
onupclick	HTML: a script expression; a button "Up" is clicked
orderControlsVerticalAlign	CustomizesÂ verticallyÂ aÂ positionÂ ofÂ orderÂ controls
orderControlsVisible	If "false", 'Up' and 'Down' controls aren't displayed.
removeAllControlClass	CSSÂ classÂ forÂ remove all control
removeAllControlLabel	Defines a label for a removeAll control
removeControlClass	CSSÂ classÂ forÂ removeÂ control
removeControlLabel	Defines a label for a remove control
rendered	If "false", this component is not rendered
required	If "true", this component is checked for non-empty input
rowClasses	CSS class for a row
rowKey	RowKey is a representation of an identifier for a specific data row
rowKeyVar	The attribute provides access to a row key in a Request scope
rows	A number of rows to display, or zero for all remaining rows in the table
showButtonLabels	Shows a label for a button
sourceCaptionLabel	Defines source list caption representation text
sourceListWidth	Defines width of a source list
sourceSelection	Manages selection in a source list from the server side

Attribute Name	Description
sourceValue	Define the collection to be shown in source list
stateVar	The attribute provides access to a component state on the client side
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
switchByClick	If "true", dragging between lists realized by click
targetCaptionLabel	Defines target list caption representation text
targetListWidth	Defines width of a target list
targetSelection	Manages selection in a target list from the server side
targetValue	Define the collection to be shown in target list
topControlClass	CSSÂ classÂ forÂ topÂ control
topControlLabel	Defines a label for a "Top" control
upControlClass	CSSÂ classÂ forÂ upÂ control
upControlLabel	Defines a label for an "Up" control
validator	MethodBinding pointing at a method that is called during Process Validations phase of the request processing lifecycle, to validate the current value of this component
valueChangeListener	Listener for value changes
var	Defines a list on the page

6.54.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
<rich:listShuttle var="item" sourceValue="#{bean.source}"
 targetValue="#{bean.target}" converter="listShuttleconverter">
        <f:facet name="sourceCaption">
                <h:outputText value="Cars Store #1" />
        </f:facet>
        <f:facet name="targetCaption">
      <h:outputText value="Cars Store #2" />
        </f:facet>
        <h:column>
     <f:facet name="header">
```

```
            <h:outputText value="Cars" />
     </f:facet>
     <h:outputText value="#{item.name}" />
        </h:column>
</rich:listShuttle>
...
```

6.54.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.listShuttle;
...
HtmllistShuttle mylistShuttle = new HtmllistShuttle();
...
```

6.54.5. Details of Usage

The **<rich:listShuttle>** component consists of the following parts:

- two item lists (source and target). List consists of items. Each item has three different representations: common, selected, active
- optional ordering controls set is a set of controls that performs reordering

The *"sourceValue"* attribute defines the collection to be shown in source list.

The *"targetValue"* attribute defines the collection to store the value from target list.

The *"var"* could be shared between both collections to defined lists on the page.

Captions could be added to a list only after it was defined as a *"sourceCaption"* and *"targetCaption"* named facets inside the component or defined with the *"sourceCaptionLabel"* and *"targetCaptionLabel"* attribute.

The **<rich:listShuttle>** component provides the possibility to use ordering controls set, which performs reordering in the target item list. Every control has possibility to be disabled.

An ordering controls set could be defined with *"topControlLabel"*, *"bottomControlLabel"*, *"upControlLabel"*, *"downControlLabel"* attributes.

It is also possible to use *"topControl"*, *"topControlDisabled"*, *"bottomControl"*, *"bottomControlDisabled"*, *"upControl"*, *"upControlDisabled"*, *"downControl"*, *"downControlDisabled"* facets in order to replace the default controls with facets content.

Example:

```
...
<rich:listShuttle var="item" sourceValue="#{bean.source}"
 targetValue="#{bean.target}" sourceSelection="#{bean.sourceSelection}"
 targetSelection="#{bean.targetSelection}">
...
        <f:facet name="topControl">
            <h:outputText value="Move to top" />
```

```
        </f:facet>
        <f:facet name="upControl">
            <h:outputText value="Move up" />
        </f:facet>
        <f:facet name="downControl">
            <h:outputText value="Move down" />
        </f:facet>
        <f:facet name="bottomControl">
            <h:outputText value="Move to bottom" />
        </f:facet>
<rich:orderingList>
...
```

Table 6.176. Keyboard usage for elements selection

Keys and combinations	Description
CTRL+click	Inverts selection for an item
SHIFT+click	Selects all rows from active one to a clicked row if they differ, else select the actve row. All other selections are cleared
CTRL+A	Selects all elements inside the list if some active element is already present in a list
Up, Down arrows	Changes the active element to the next or previous in a list and make it the only selected. Scroll follows the selection to keep it visible

Table 6.177. Keyboard usage for elements reordering

Keys and combinations	Description
Home	Moves selected set to the top of a list
End	Moves selected set to the bottomof a list
CTRL+Up arrow	Moves selected item to one position upper
CTRL+Down arrow	Moves selected item to one position lower

6.54.6. JavaScript API

Table 6.178. JavaScript API

Function	Description
Hide()	Hides ordering control
Show()	Shows ordering control
isShown()	Checks if current control is shown
Enable()	Enables ordering control

Function	Description
Disable()	Disables ordering control
isEnabled()	Checks if current control is enabled
moveUp()	Moves up selected item in the list
moveDown()	Moves down selected item in the list
moveTop()	Moves top selected item in the list
moveBottom()	Moves bottom selected item in the list
copy()	Copies selected item from the source list to the target list
remove()	Removes selected item from the target list to the source list
copyAll()	Copies all items from the source list to the target list
removeAll()	Removes all items from the target list to the source list
getSelection()	Returns currently selected item
getItems()	Returns the collection of all items

6.54.7. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:listShuttle>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets style classes used by a **<rich:listShuttle>** component

6.54.8. Skin Parameters Redefinition

Table 6.179. Skin parameters redefinition for items in the source and target lists

Skin parameters	CSS properties
generalBackgroundColor	background-color
tableBorderColor	border-color
tableBorderWidth	border-width

Table 6.180. Skin parameters redefinition for caption in the source and target lists

Skin parameters	CSS properties
headerFamilyFont	font-family

Skin parameters	CSS properties
headerSizeFont	font-size
headerWeightFont	font-weight

Table 6.181. Skin parameters redefinition for a selected rows in the source and target lists

Skin parameters	CSS properties
additionalBackgroundColor	background-color

Table 6.182. Skin parameters redefinition for a header cell

Skin parameters	CSS properties
headerBackgroundColor	background-color
headerTextColor	color
headerFamilyFont	font-family
headerSizeFont	font-size
tableBorderWidth	border-width
subBorderColor	border-top-color
panelBorderColor	border-bottom-color
panelBorderColor	border-right-color

Table 6.183. Skin parameters redefinition for a selected cell

Skin parameters	CSS properties
generalTextColor	color
generalFamilyFont	font-family
generalSizeFont	font-size

Table 6.184. Skin parameters redefinition for an active cell

Skin parameters	CSS properties
generalSizeFont	font-size
generalFamilyFont	font-family

Table 6.185. Skin parameters redefinition for controls

Skin parameters	CSS properties
tableBorderColor	border-color

Table 6.186. Skin parameters redefinition for a button

Skin parameters	CSS properties
trimColor	background-color
generalTextColor	color
headerFamilyFont	font-family
headerSizeFont	font-size

Table 6.187. Skin parameters redefinition for a disabled button

Skin parameters	CSS properties
trimColor	background-color
tabDisabledTextColor	color
headerFamilyFont	font-family
headerSizeFont	font-size

Table 6.188. Skin parameters redefinition for a button highlight

Skin parameters	CSS properties
trimColor	background-color
selectControlColor	border-color
tableBorderWidth	border-width
headerFamilyFont	font-family
headerSizeFont	font-size
generalTextColor	color

Table 6.189. Skin parameters redefinition for a pressed button

Skin parameters	CSS properties
additionalBackgroundColor	background-color
tableBorderColor	border-color
tableBorderWidth	border-width
headerFamilyFont	font-family
headerSizeFont	font-size
generalTextColor	color

Table 6.190. Skin parameters redefinition for a button content

Skin parameters	CSS properties
headerFamilyFont	font-family
headerSizeFont	font-size

Table 6.191. Skin parameters redefinition for a button selection

Skin parameters	CSS properties
generalTextColor	color

6.54.9. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

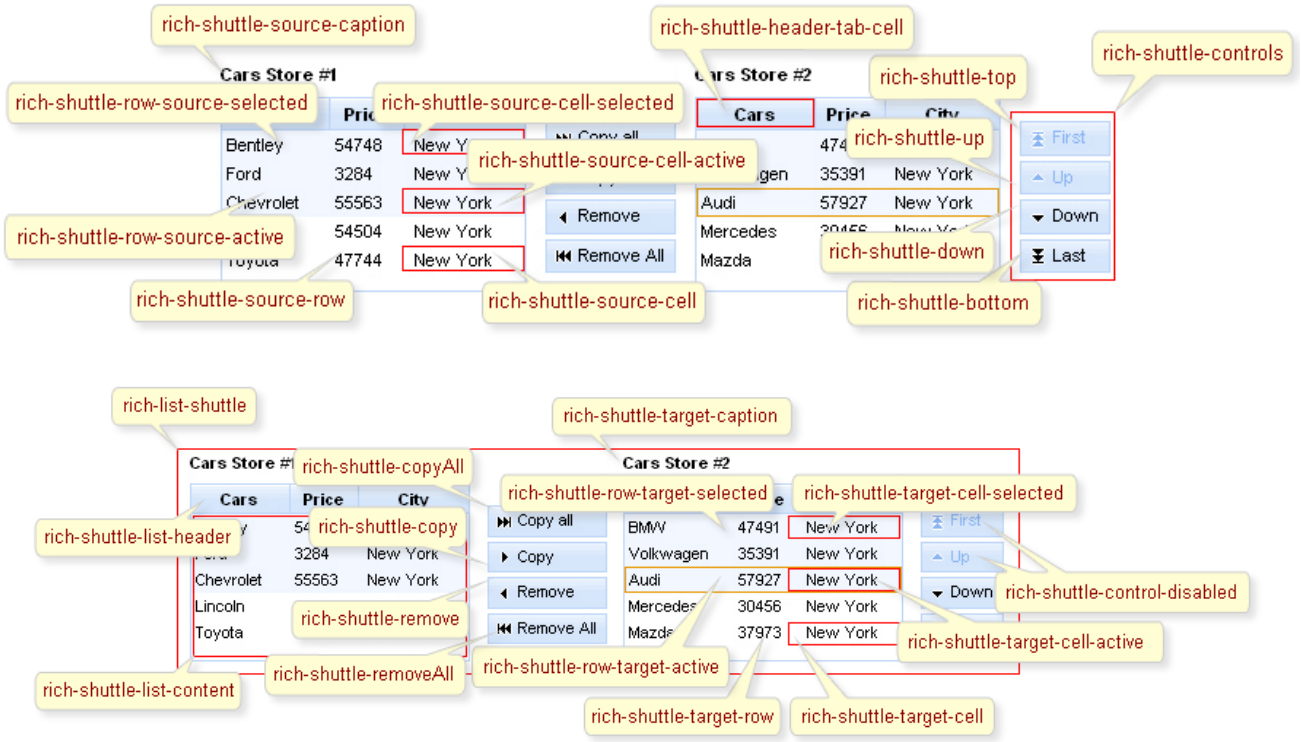


Figure 6.67. Style classes

Table 6.192. Classes names that define a list representation

Class name	Description
rich-list-shuttle	Defines styles for a wrapper table element of a listShuttle
rich-list-shuttle-caption	Defines styles for a list caption
rich-shuttle-body	Defines styles for a list body
rich-shuttle-list-content	Defines styles for a list content

Class name	Description
rich-shuttle-source-items	Defines styles for a wrapper element for source list
rich-shuttle-target-items	Defines styles for a wrapper element for target list
rich-shuttle-list-header	Defines styles for a lists header
rich-shuttle-header-tab-cell	Defines styles for a header cell

Table 6.193. Classes names that define a caption representations in a source and target lists

Class name	Description
rich-shuttle-source-caption	Defines styles for a caption in a source list
rich-shuttle-target-caption	Defines styles for a caption in a target list

Table 6.194. Classes names that define a rows representations in a source list

Class name	Description
rich-shuttle-source-row	Defines styles for a row in a source list
rich-shuttle-source-row-selected	Defines styles for a selected row in a source list
rich-shuttle-source-row-active	Defines styles for an active row in a source list

Table 6.195. Classes names that define a rows representations in a target list

Class name	Description
rich-shuttle-target-row	Defines styles for a row in a target list
rich-shuttle-target-row-selected	Defines styles for a selected row in a target list
rich-shuttle-target-row-active	Defines styles for an active row in a target list

Table 6.196. Classes names that define a cells representations in a source list

Class name	Description
rich-shuttle-source-cell	Defines styles for a cell in a source list
rich-shuttle-source-cell-selected	Defines styles for a selected cell in a source list
rich-shuttle-source-cell-active	Defines styles for an active cell in a source list

Table 6.197. Classes names that define a cells representations in a target list

Class name	Description
rich-shuttle-target-cell	Defines styles for a cell in a target list

Class name	Description
rich-shuttle-target-cell-selected	Defines styles for a selected cell in a target list
rich-shuttle-target-cell-active	Defines styles for an active cell in a target list

Table 6.198. Classes names that define controls representations

Class name	Description
rich-shuttle-controls	Defines styles for a controls group
rich-shuttle-top	Defines styles for a "Top" control
rich-shuttle-bottom	Defines styles for a "Bottom" control
rich-shuttle-up	Defines styles for a "Up" control
rich-shuttle-down	Defines styles for a "Down" control
rich-shuttle-copy	Defines styles for a "Copy" control
rich-shuttle-remove	Defines styles for a "Remove" control
rich-shuttle-copyAll	Defines styles for a "copyAll" control
rich-shuttle-removeAll	Defines styles for a "removeAll" control
rich-shuttle-control-disabled	Defines styles for a control in a disabled state

Table 6.199. Classes names that define a button representation

Class name	Description
rich-list-shuttle-button	Defines styles for a button
rich-list-shuttle-button-disabled	Defines styles for a disabled button
rich-list-shuttle-button-light	Defines styles for a button highlight
rich-list-shuttle-button-press	Defines styles for a pressed button
rich-list-shuttle-button-content	Defines styles for a button content
rich-list-shuttle-button-selection	Defines styles for a button selection

In order to redefine styles for all **<rich:listShuttle>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:listShuttle>** components, define your own style classes in the corresponding **<rich:listShuttle>** component attributes.

6.54.10. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/listShuttle.jsf?c=listShuttle] you can see an example of **<rich:listShuttle>** usage and sources for the given example.

6.55. < rich:message >

6.55.1. Description

The component used for rendering a single message for a specific component.

Figure 6.68. Message component

6.55.2. Key Features

- Highly customizable look and feel
- Track both traditional and Ajax based requests
- Optional tooltip to display the detail portion of the message
- Additionally customizable via attributes and facets
- Additionally provides of two parts to be optionally defined: marker and label

Table 6.200. rich : message attributes

Attribute Name	Description
ajaxRendered	Define, must be (or not) content of this component will be included in AJAX response created by parent AJAX Container, even if not forced by reRender list of ajax action. ignored if component marked to output by Ajax action.
binding	The attribute takes a value-binding expression for a component property of a backing bean
errorClass	CSS style class to apply to any message with a severity class of "ERROR"
errorLabelClass	CSS style class to apply to any message label with a severity class of "ERROR"
errorMarkerClass	CSS style class to apply to any message marker with a severity class of "ERROR"
fatalClass	CSS style class to apply to any message with a severity class of "FATAL"
fatalLabelClass	CSS style class to apply to any message label with a severity class of "FATAL"
fatalMarkerClass	CSS style class to apply to any message marker with a severity class of "FATAL"

Attribute Name	Description
for	Client identifier of the component for which to display messages
id	Every component may have a unique id that is automatically created if omitted
infoClass	CSS style class to apply to any message with a severity class of "INFO"
infoLabelClass	CSS style class to apply to any message label with a severity class of "INFO"
infoMarkerClass	CSS style class to apply to any message marker with a severity class of "INFO"
keepTransient	Flag for mark all child components to non-transient. If "true", all children components will be set to non-transient state and keep in saved components tree. For output in self-renderer region all content (By default, all content in <f:verbatim> tags and non-jsf elements in facelets, marked as transient - since, self-rendered ajax regions don't plain output for ajax processing).
labelClass	CSS style class to apply to label
level	comma-separated list of messages categoris which should be displayed
markerClass	CSS style class to apply to marker
markerStyle	CSS style(s) is/are to be applied to marker when this component is rendered
passedLabel	Attribute should define the label to be displayed when no message appears
rendered	If "false", this component is not rendered
showDetail	Flag indicating whether the summary portion of displayed messages should be included. Default value is "true"
showSummary	Flag indicating whether the summary portion of displayed messages should be included. Default value is "false"
style	The CSS style for message
styleClass	Space-separated list of CSS style class(es) to be applied when this element is rendered. This value must be

Attribute Name	Description
	passed through as the "class" attribute on generated markup
title	Advisory title information about markup elements generated for this component
tooltip	Flag indicating whether the detail portion of the message should be displayed as a tooltip
warnClass	CSS style class to apply to any message with a severity class of "WARN"
warnLabelClass	CSS style class to apply to any message label with a severity class of "WARN"
warnMarkerClass	CSS style class to apply any message marker with a severity class of "WARN"

Table 6.201. Component identification parameters

Name	Value
component-type	org.richfaces.component.RichMessage
component-class	org.richfaces.component.html.HtmlRichMessage
component-family	org.richfaces.component.RichMessage
renderer-type	org.richfaces.renderkit.html.RichMessagesHtmlBaseRender
tag-class	org.richfaces.taglib.RichMessageTag

6.55.3. Creating the Component with a Page Tag

To create the simplest variant of message on a page, use the following syntax:

Example:

```
...
  <rich:message for="id"/>
...
```

6.55.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlRichMessage;
...
HtmlRichMessage myMessage = new HtmlRichMessage();
...
```

6.55.5. Details of Usage

The component has the same behavior as standard **<h:message>** component except next two features:

- It's ajaxRendered. It means that the component is reRendered after Ajax request automatically without outputPanel usage
- The component optionally provides "passed" state which will be shown if no message to be displayed
- Provides possibility to add some marker to message. By default marker element isn't shown

Set of facet which can be used for marker defining:

- passedMarker. This facet is provided to allow set a marker to be displayed if there is no message
- errorMarker. This facet is provided to allow set a marker to be displayed if there is a message with a severity class of "ERROR"
- fatalMarker. This facet is provided to allow set a marker to be displayed if there is a message with a severity class of "FATAL"
- infoMarker. This facet is provided to allow set a marker to be displayed if there is a message with a severity class of "INFO"
- warnMarker. This facet is provided to allow set a marker to be displayed if there is an message with a severity class of "WARN"

The following example shows different variants of customization of the component. The attribute 'passedLabel' is used for definition the label to be displayed when no message appears. But the message component isn't appears before the form submission even with passed state defined (on initial rendering).Boolean attribute *"showSummary"* defines possibility to display summary portion of displayed messages. The facets "errorMarker" and 'passedMarker' set corresponding images for markers.

Example:

```
...
       <rich:message for="id" passedLabel="No errors' showSummary="true">
        <f:facet name="errorMarker">
         <h:graphicImage url="/image/error.gif"/>
        </f:facet>
   <f:facet name="passedMarker">
         <h:graphicImage url="/image/passed.gif"/>
        </f:facet>
  </rich:message>
...
```

6.55.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.*

There are no skin parameters and default predefined values. To redefine the appearance of all **<rich:message>** components at once, you should only add to your style sheets *style classes* used by a **<rich:message>** component.

6.55.7. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

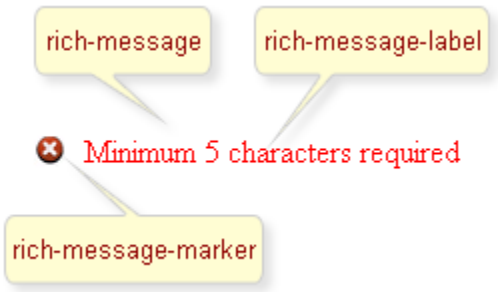


Figure 6.69. Classes names

Table 6.202. Classes names that define a component appearance

Class name	Description
rich-message	Defines styles for a wrapper element
rich-message-marker	Defines styles for a marker
rich-message-label	Defines styles for a label

In order to redefine styles for all **<rich:message>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:message>** components, define your own style classes in the corresponding **<rich:message>** attributes.

6.55.8. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/message.jsf?c=message] you can see the example of **<rich:message>** usage and sources for the given example.

6.56. < rich:messages >

6.56.1. Description

The **<rich:messages>** component is similar to **<rich:message>** component but used for rendering all messages for the components.

Minimum 5 characters required for: 1 input
Minimum 3 characters required for: 2 input

Figure 6.70. Message component

6.56.2. Key Features

- Highly customizable look and feel

- Track both traditional and Ajax based requests
- Optional tooltip to display a detailed part of the messages
- Additionally customizable via attributes and facets
- Additionally provides of three parts to be optionally defined: marker, label and header

Table 6.203. rich : messages attributes

Attribute Name	Description
ajaxRendered	Define, must be (or not) content of this component will be included in AJAX response created by parent AJAX Container, even if not forced by reRender list of ajax action. ignored if component marked to output by Ajax action.
binding	The attribute takes a value-binding expression for a component property of a backing bean
errorClass	CSS style class to apply to any message with a severity class of "ERROR"
errorLabelClass	CSS style class to apply to any message label with a severity class of "ERROR"
errorMarkerClass	CSS style class to apply to any message marker with a severity class of "ERROR"
fatalClass	CSS style class to apply to any message with a severity class of "FATAL"
fatalLabelClass	CSS style class to apply to any message label with a severity class of "FATAL"
fatalMarkerClass	CSS style class to apply to any message marker with a severity class of "FATAL"
globalOnly	Flag indicating that only global messages (that is, messages not associated with any client identifier) are to be displayed. Default value is "false"
id	Every component may have a unique id that is automatically created if omitted
infoClass	CSS style class to apply to any message with a severity class of "INFO"
infoLabelClass	CSS style class to apply to any message label with a severity class of "INFO"
infoMarkerClass	

Attribute Name	Description
	CSS style class to apply to any message marker with a severity class of "INFO"
keepTransient	Flag for mark all child components to non-transient. If "true", all children components will be set to non-transient state and keep in saved components tree. For output in self-renderer region all content (By default, all content in <f:verbatim> tags and non-jsf elements in facelets, marked as transient - since, self-rendered ajax regions don't plain output for ajax processing).
labelClass	CSS style class to apply to label
layout	The type of layout markup to use when rendering error messages. Valid values are "table" (an HTML table), "list" (an HTML list) and iterator. If not specified, the default value is "list"
level	comma-separated list of messages categoris which should be displayed
markerClass	CSS style class to apply to marker
markerStyle	CSS style(s) is/are to be applied to marker when this component is rendered
passedLabel	Attribute should define the label to be displayed when no message appears
rendered	If "false", this component is not rendered
showDetail	Flag indicating whether the summary portion of displayed messages should be included. Default value is "true"
showSummary	Flag indicating whether the summary portion of displayed messages should be included. Default value is "false"
style	The CSS style for message
styleClass	Space-separated list of CSS style class(es) to be applied when this element is rendered. This value must be passed through as the "class" attribute on generated markup
title	Advisory title information about markup elements generated for this component

Attribute Name	Description
tooltip	Flag indicating whether the detail portion of the message should be displayed as a tooltip
warnClass	CSS style class to apply to any message with a severity class of "WARN"
warnLabelClass	CSS style class to apply to any message label with a severity class of "WARN"
warnMarkerClass	CSS style class to apply any message marker with a severity class of "WARN"

Table 6.204. Component identification parameters

Name	Value
component-type	org.richfaces.component.RichMessages
component-class	org.richfaces.component.html.HtmlRichMessages
component-family	org.richfaces.component.RichMessages
renderer-type	org.richfaces.renderkit.html.HtmlRichMessagesRendere
tag-class	org.richfaces.taglib.RichMessagesTag

6.56.3. Creating the Component with a Page Tag

To create the simplest variant of message on a page, use the following syntax:

Example:

```
...
  <rich:messages/>
...
```

6.56.4. Creating the Component Dynamically Using Java

Example:

```
import  org.richfaces.component.html.HtmlRichMessages;
...
HtmlRichMessages myMessages = new HtmlRichMessages();
...
```

6.56.5. Details of Usage

The component has the same behavior as standard **<h:message>** component except next features:

- It's ajaxRendered. It means that the component is reRendered after Ajax request automatically without outputPanel usage.

- The component optionally provides "passed" state which will be shown if no message to be displayed.
- Provides possibility to add some marker to message. By default, a marker element isn't shown.

The component provides two parts to be optionally defined: marker and informational label before the marker for every message.

Set of facet which can be used for a marker defining:

- passedMarker. This facet is provided to allow setting a marker to be displayed if there is no message.
- errorMarker. This facet is provided to allow setting a marker to be displayed if there is a message with a severity class of "ERROR".
- fatalMarker. This facet is provided to allow setting a marker to be displayed if there is a message with a severity class of "FATAL".
- infoMarker. This facet is provided to allow setting a marker to be displayed if there is a message with a severity class of "INFO".
- warnMarker. This facet is provided to allow setting a marker to be displayed if there is an message with a severity class of "WARN".

The following example shows different variants of customization of the component.

Example:

```
...
    <rich:messages layout="table" tooltip="true" showDetail="false"
 showSummary="true" passedLabel="No Errors" var="messages">
        <f:facet name="errorMarker">
            <h:graphicImage url="/image/error.gif"/>
        </f:facet>
        <f:facet name="infoMarker">
            <h:graphicImage url="/image/info.gif"/>
        </f:facet>
        <f:facet name="passedMarker">
            <h:graphicImage url="/image/passed.gif"/>
        </f:facet>
    </rich:messages>
...
```

6.56.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.*

There are no skin parameters and default predefined values. To redefine the appearance of all **<rich:messages>** components at once, you should only add to your style sheets *style classes* used by a **<rich:messages>** component.

6.56.7. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

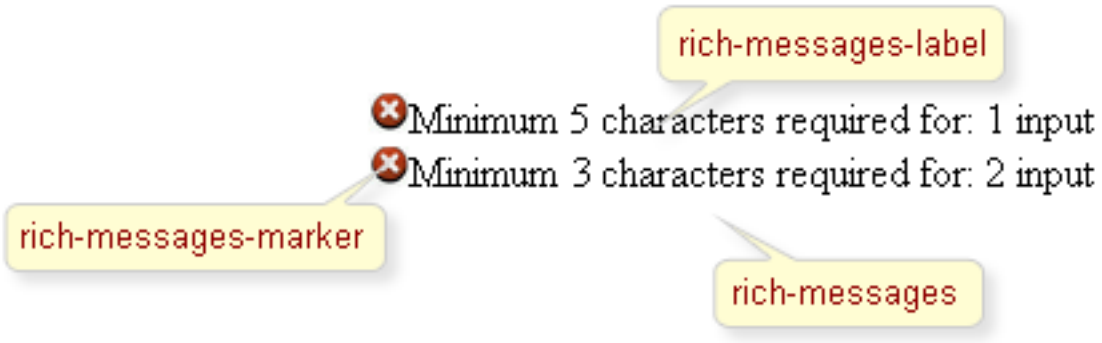


Figure 6.71. Classes names

Table 6.205. Classes names that define a component appearance

Class name	Description
rich-messages	Defines styles for a wrapper element
rich-messages-marker	Defines styles for a marker
rich-messages-label	Defines styles for a label

In order to redefine styles for all **<rich:messages>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:messages>** components, define your own style classes in the corresponding **<rich:messages>** attributes.

6.56.8. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/messsages.jsf?c=messages] you can see the example of **<rich:messages>** usage and sources for the given example.

6.57. < rich:modalPanel >

6.57.1. Description

The component implements a modal dialog window. All operations in the main application window are locked out while this window is active. Opening and closing the window is done through client JavaScript code.

Figure 6.72. ModalPanel component

6.57.2. Key Features

- Highly customizable look and feel
- Support of draggable operations and size changes by you
- Easy positioning for the modal dialog window
- Possibility to restore of the previous component state on a page (including position on the screen) after submitting and reloading

Table 6.206. rich : modalPanel attributes

Attribute Name	Description
autosized	If 'true' modalPanel should be autosizeable
binding	The attribute takes a value-binding expression for a component property of a backing bean
controlsClass	CSS style(s) is/are to be applied to component controls when this component is rendered
converter	Id of Converter to be used or reference to a Converter
converterMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the converter message, replacing any message that comes from the converter
headerClass	

Attribute Name	Description
	CSS style(s) is/are to be applied to component header when this component is rendered
height	Attribute defines height of component
id	Every component may have a unique id that is automatically created if omitted
keepVisualState	If "true" modalPanel should save state after submittion
left	Attribute defines X position of component left-top corner
minHeight	Attribute defines min height of component
minWidth	Attribute defines min width of component
moveable	if "true" there is possibility to move component
onhide	Event must occurs after panel closed
onshow	Event must occurs after panel opened
rendered	If "false", this component is not rendered
resizeable	if "true" there is possibility to change component size
shadowDepth	Pop-up shadow depth for suggestion content
shadowOpacity	HTML CSS class attribute of element for pop-up suggestion content
showWhenRendered	If "true" value for this attribute makes a modal panel opened as default.
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
top	Attribute defines Y position of component left-top corner
tridentIVEngineSelectBehavior	How to handle HTML SELECT-based controls in IE 6? - "disable" - default, handle as usual, use disabled="true" to hide SELECT controls - "hide" - use visibility="hidden" to hide SELECT controls
validator	MethodBinding pointing at a method that is called during Process Validations phase of the request processing lifecycle, to validate the current value of this component

Attribute Name	Description
validatorMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the validator message, replacing any message that comes from the validator
value	The initial value to set when rendered for the first time
valueChangeListener	Listener for value changes
visualOptions	Defines options that were specified on the client side
width	Attribute defines width of component
zindex	Attribute is similar to the standard HTML attribute and can specify window placement relative to the content

Table 6.207. Component identification parameters

Name	Value
component-type	org.richfaces.ModalPanel
component-class	org.richfaces.component.html.HtmlModalPanel
component-family	org.richfaces.ModalPanel
renderer-type	org.richfaces.ModalPanelRenderer
tag-class	org.richfaces.taglib.ModalPanelTag

6.57.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:modalPanel id="panel">
        <f:facet name="header">
            <h:outputText value="header">
        </f:facet>
        ...
        <!--Any Content inside-->
        ...
        <a href="javascript:RichFaces.hideModalPanel('form:panel')">Hide</a>
    </rich:modalpanel>
...
    <a href="javascript:RichFaces.showModalPanel('form:panel')">Show</a>
...
```

6.57.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlModalPanel;
...
HtmlModalPanel myPanel = new HtmlModalPanel();
...
```

6.57.5. Details of Usage

The component is defined as a panel with some content inside that displays its content as a modal dialog. To call it and to close it, the client API for the window is used.

Table 6.208. Functions description

Function	Description
RichFaces.showModalPanel (client Id)	Opens a window with a specified client Id
RichFaces.hideModalPanel (client Id)	Closes a window with a specified client Id

New:

In order to avoid a bug in IE, the root node of the dialog is moved on the top of a DOM tree. However, you should have a separate form inside the modal panel if you want to perform submits from this panel.

It's possible to add a *"header"* facet to the component to set the content for the header.

Example:

```
...
    <form jsfc="h:form" id="form">
        <rich:modalPanel id="panel" width="400" height="300">
            <f:facet name="header">
                <h:outputText value="Modal Panel"/>
            </f:facet>
        <h:graphicImage value="/pages/california_large.gif"/>
        <a href="javascript:Richfaces.hideModalPanel('form:panel')">Close</a>
        </rich:modalPanel>
        <a href="javascript:Richfaces.showModalPanel('form:panel');">Open</a>
    </form>
...
```

This defines a window with a particular size and ID. It includes one "Open" link. Clicking on this link makes the modal window content appear.

Figure 6.73. ModalPanel with links

A facet named *"controls"* can be added to the component to place control elements on a header.

Example:

```
...
    <rich:modalPanel id="mp">
        <f:facet name="header"><h:outputText value="Modal Panel"/></f:facet>
        <f:facet name="controls">
             <h:graphicImage value="/pages/close.png" style="cursor:pointer"
 onclick="Richfaces.hideModalPanel('mp')" />
        </f:facet>
        <h:graphicImage value="/pages/california_large.gif"/>
    </rich:modalPanel>
```

The result is displayed here:

Figure 6.74. ModalPanel with control element

To manage the placement of inserted windows, use the *"zindex"* attribute that is similar to the standard HTML attribute and can specify window placement relative to the content.

To manage window placement relative to the component, there are *"left"* and *"top"* attributes defining a window shifting relative to the top-left corner of the window.

Modal windows can also support resize and move operations on the client side. To allow or disallow these operations, set the *"resizeable"* and *"moveable"* attributes to *"true"* or *"false"* values. Window resizing is also limited by *"minWidth"* and *"minHeight"* attributes specifying the minimal window sizes.

You can pass your parameters during modalPanel opening or closing. This passing could be performed in the following way:

Example:

```
Richfaces.showModalPanel('panelId', {left: auto}, {param1: value1});
```

Thus, except the standard modalPanel parameters you can pass any of your own parameters.

Also modalPanel allows to handle its own opening and closing events on the client side. The *"onshow"* and *"onclose"* attributes are used in this case.

The following example shows how on the client side to define opening and closing event handling in such a way that your own parameters could also be obtained:

Example:

```
onshow="alert(event.parameters.param1)"
```

Here, during modalPanel opening the value of a passing parameter is output.

More information about this problem could be found on the RichFaces Development Forum [http://www.jboss.com/index.html?module=bb&op=viewtopic&t=111804].

There is a possibility to restore of the previous component state on a page (including position on the screen) after submitting and reloading. The modalPanel has some special attributes like *"showWhenRendered"* and *"keepVisualState"* .

"showWhenRendered" - This boolean attribute is used if modalPanel should be rendered after first page loading.

"keepVisualState" - Used if modalPanel should save state after submission. If *"keepVisualState"* =true then parameters which modalPanel has during opening should be submitted and passed to new page.

Example:

```
...
<a href="javascript:Richfaces.showModalPanel('_panel', {top:'10px', left:'10px',
 height:'400'});">Show</a>
...
```

Here, if you open modal dialog window using current link and after submits data then modalPanel destination and height on new loaded page will be restored.

if you need the content of the modalPanel to be submitted - you need to remember two important rules:

- modalPanel must have its own form if it has form elements (input or/and command components) inside (as it was shown in the example above)
- modalPanel must not be included into the form (on any level up) if it has the form inside.

Simple example of using commandButton within modalPanel is placed below.

Example:

```
...
        <rich:modalPanel>
                <f:facet name="header">
                        <h:outputText value="Test" />
                </f:facet>
                <f:facet name="controls">
                        <h:commandLink value="Close" style="cursor:pointer"
 onclick="Richfaces.hideModalPanel('mp')" />
                </f:facet>
                <h:form>
                        <t:commandButton value="Test" action="#{TESTCONTROLLER.test}"
 />
                </h:form>
        </rich:modalPanel>
        ...
        <h:form>
                <!--Some other Page content-->
        </h:form>
...
```

See also discussion about this problem on the RichFaces Users Forum [http://www.jboss.com/index.html?module=bb&op=viewtopic&p=4064191].

6.57.6. JavaScript API

Table 6.209. JavaScript API

Function	Description
Show()	Shows the corresponding tooltip
Hide()	Hides the corresponding tooltip

6.57.7. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:modalPanel>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:modalPanel>** component

6.57.8. Skin Parameters Redefinition

Table 6.210. Skin parameters for a component

Skin parameters	CSS properties
generalBackgroundColor	background-color
panelBorderColor	border-color

Table 6.211. Skin parameters redefinition for a header element

Skin parameters	CSS properties
headerBackgroundColor	background-color
headerBackgroundColor	border-color

Table 6.212. Skin parameters redefinition for a header content

Skin parameters	CSS properties
headerSizeFont	background-color
headerTextColor	font-size
headerWeightFont	color
headerFamilyFont	font-family

Table 6.213. Skin parameters redefinition for a body element

Skin parameters	CSS properties
generalSizeFont	font-size
generalTextColor	color
generalFamilyFont	font-family

6.57.9. Definition of Custom Style Classes

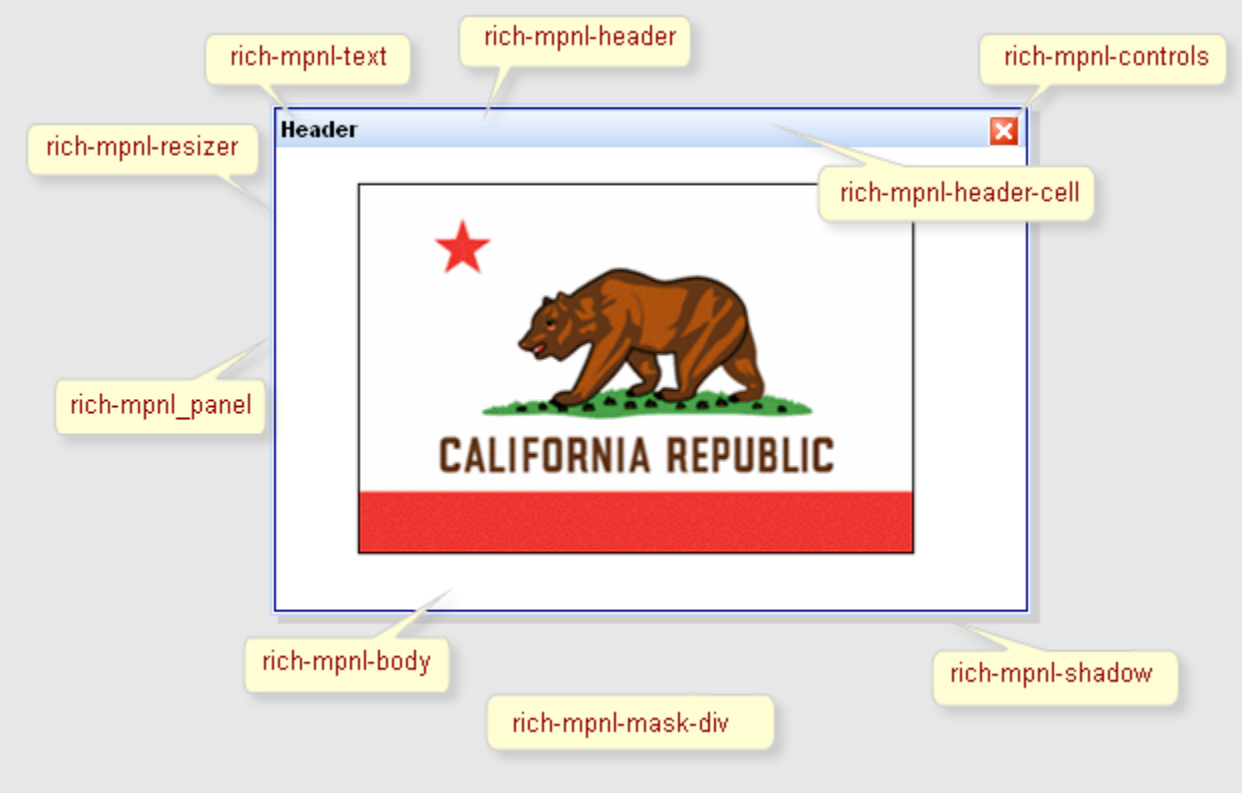


Figure 6.75. Modal Panel class names

The screenshot shows the classes names for defining different elements.

Table 6.214. Classes names that define a component appearance

Class name	Description
rich-modalpanel	Defines styles for a wrapper element of a modalpanel
rich-mpnl_panel	Defines styles for a modalpanel
rich-mpnl-mask-div	Defines styles for a wrapper element of a mask
rich-mpnl-resizer	Defines styles for a wrapper element of a resizing element

Class name	Description
rich-mpnl-shadow	Defines styles for a modalpanel shadow
rich-mpnl-header	Defines styles for a modalpanel header
rich-mpnl-header-cell	Defines styles for a header cell
rich-mpnl-text	Defines styles for a wrapper element of a header text
rich-mpnl-body	Defines styles for a content inside a modalpanel
rich-mpnl-controls	Defines styles for a wrapper element of a modalpanel control

In order to redefine styles for all **<rich:modalPanel>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:modalPanel>** components, define your own style classes in the corresponding **<rich:modalPanel>** attributes.

6.57.10. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/modalPanel.jsf?c=modalPanel] you can see the example of **<rich:modalPanel>** usage and sources for the given example.

Information about wizards using the **<rich:modalPanel>** component could be found in the Wiki article [http://labs.jboss.com/wiki/ModalPanelWizards] and in the FAQ chapter of the guide.

Examples of validation in **<rich:modalPanel>** could be found in the Wiki article [http://labs.jboss.com/wiki/ModalPanelValidation] and on the RichFaces Users Forum [http://www.jboss.com/index.html?module=bb&op=viewtopic&p=4061517].

6.58. < rich:orderingList >

6.58.1. Description

The **<rich:orderingList>** is a component for ordering items in a list. This component provides possibilities to reorder a list and sort it on the client side.

6.58.2. Key Features

- Highly customizable look and feel
- Reordering and sorting possibilities for list items
- Multiple selection of list items
- Keyboard support

Table 6.215. rich : orderingList attributes

Attribute Name	Description
activeItem	Stores active item
ajaxKeys	Defines strings that are updated after an Ajax request
binding	The attribute takes a value-binding expression for a component property of a backing bean
bottomControlLabel	Defines a label for a 'Bottom' control
captionLabel	Defines caption representation text
columnClasses	CSS class for a column
componentState	It defines EL-binding for a component state for saving or redefinition
controlsHorizontalAlign	Controls horizontal rendering. Possible values: left - controls should be rendered to the left side of a list. right(Default)- controls should be rendered to the right side of a list.
controlsType	Defines type of a control: button or none.
controlsVerticalAlign	Controls vertical rendering. Possible values: top - controls should be rendered aligned to top side of a list. bottom - controls should be rendered aligned to bottom side of a list. center(Default) - controls should be rendered centered relatively to a list.
converter	Id of Converter to be used or reference to a Converter
downControlLabel	Defines a label for a 'Down' control
fastOrderControlsVisible	If "false", 'Top' and 'Bottom' controls aren't displayed.
id	Every component may have a unique id that is automatically created if omitted
immediate	True means, that the default ActionListener should be executed immediately (i.e. during Apply Request

Attribute Name	Description
	Values phase of the request processing lifecycle), rather than waiting until the Invoke Application phase
listHeight	Defines height of a list
listWidth	Defines width of a list
onbottomclick	A JavaScript event handler; a button "Bottom" is clicked
onclick	HTML: a script expression; a pointer button is clicked
ondblclick	HTML: a script expression; a pointer button is double-clicked
ondownclick	A JavaScript event handler; a button "Down" is clicked
onheaderclick	A JavaScript event handler; a header is clicked
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onorderchanged	A JavaScript event handler called on an order operation
ontopclick	A JavaScript event handler; a button "Top" is clicked
onupclick	HTML: a script expression; a button "Up" is clicked
orderControlsVisible	If "false", 'Up' and 'Down' controls aren't displayed.
rendered	If "false", this component is not rendered
required	If "true", this component is checked for non-empty input
rowClasses	CSS class for a row
rowKey	RowKey is a representation of an identifier for a specific data row
rowKeyVar	The attribute provides access to a row key in a Request scope
rows	A number of rows to display, or zero for all remaining rows in the list
selection	Collection which stores a set of selected items
showButtonLabels	If "true", shows a label for a button
sortIcon	Specifies a default icon for a sorting marker in non-sorting position.

Attribute Name	Description
sortIconDown	Specifies an icon for a sorting marker in sorting 'down' position.
sortIconUp	Specifies an icon for a sorting marker in sorting 'up' position.
stateVar	The attribute provides access to a component state on the client side
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
topControlLabel	Defines a label for a 'Top' control
upControlLabel	Defines a label for a 'Up' control
validator	MethodBinding pointing at a method that is called during Process Validations phase of the request processing lifecycle, to validate the current value of this component
value	Define the collection to be shown in a list
valueChangeListener	Listener for value changes
var	Defines a list on the page

Table 6.216. Component identification parameters

Name	Value
component-type	org.richfaces.OrderingList
component-class	org.richfaces.component.html.HtmlOrderingList
component-family	org.richfaces.OrderingList
renderer-type	org.richfaces.OrderingListRenderer
tag-class	org.richfaces.taglib.OrderingListTagHandler

6.58.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
<rich:orderingList value="#{bean.list}" var="list">
        <rich:column>
            <f:facet name="header">
```

```
     <h:outputText value="Name" />
            </f:facet>
            <h:inputText value="#{list.name}" />
        </rich:column>
<rich:orderingList>
...
```

6.58.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlOrderingList;
...
HtmlOrderingList myOrderingList = new HtmlOrderingList();
...
```

6.58.5. Details of Usage

The **<rich:orderingList>** component consists of

- Item list element that displays a list of items. It has three different representations for a single element: common, selected, active. Combination of these states is possible.
- Ordering controls set

The *"value"* and *"var"* attributes are used to access the values of a list.

The *"selection"* attribute stores the collection of items selected by user. In the example below after submitting the form the current collection is placed in the object's property and then **<rich:dataTable>** with selected items will be shown.

Example:

```
...
<h:form>
        <rich:orderingList value="#{bean.simpleItems}" var="item"
 selection="#{bean.selection}" controlsType="button">
                <rich:column>
                    <f:facet name="header">
                            <h:outputText value="Cars" />
                    </f:facet>
                            <h:outputText value="#{item}" />
                </rich:column>
        </rich:orderingList>
        <rich:dataTable id="infoPanelID" value="#{bean.info}" var="info"
 rendered="true">
                <rich:column>
                            <h:outputText value="#{info}" />
                </rich:column>
        </rich:dataTable>
        <a4j:commandButton value="reRender" reRender="infoPanelID" />
</h:form>
...
```

The **<rich:orderingList>** component allows to use *"header"* facets.

Simple example is placed below.

Example:

```
...
<rich:orderingList value="#{bean.simpleItems}" var="item" controlsType="button"
 selection="#{bean.selection}">
        <f:facet name="caption">
                <h:outputText value="Caption Facet" />
        </f:facet>
        <rich:column>
                <f:facet name="header">
             <h:outputText value="Cars" />
                </f:facet>
                <h:outputText value="#{item.name}" />
        </rich:column>
        <rich:column>
                <f:facet name="header">
             <h:outputText value="Price" />
                </f:facet>
                <h:outputText value="#{item.price}" />
        </rich:column>
</rich:orderingList>
...
```

The **<rich:orderingList>** component provides the possibility to use ordering controls set, which performs reordering. Every control has possibility to be disabled.

An ordering controls set could be defined with *"topControlLabel"*, *"bottomControlLabel"*, *"upControlLabel"*, *"downControlLabel"* attributes.

It is also possible to use *"topControl"*, *"topControlDisabled"*, *"bottomControl"*, *"bottomControlDisabled"*, *"upControl"*, *"upControlDisabled"*, *"downControl"*, *"downControlDisabled"* facets in order to replace the default controls with facets content.

Example:

```
...
<rich:orderingList value="#{bean.simpleItems}" var="item" controlsType="button"
 selection="#{bean.selection}">
        <f:facet name="topControl">
                <h:outputText value="Move to top" />
        </f:facet>
        <f:facet name="upControl">
                <h:outputText value="Move up" />
        </f:facet>
        <f:facet name="downControl">
                <h:outputText value="Move down" />
        </f:facet>
        <f:facet name="bottomControl">
                <h:outputText value="Move to bottom" />
        </f:facet>
<rich:orderingList>
```

```
. . .
```

The position of the controls relatively to a list could be customized with:

- *"controlsHorizontalAlign"* attribute. Possible values:
  - left - controls render to the left side of a list
  - right(default) - controls render to the right side of a list
  - center - controls is centered
- *"controlsVerticalAlign"* attribute. Possible values:
  - top - controls render aligned to the top side of a list
  - bottom - controls render aligned to the bottom side of a list
  - center(default) - controls is centered relatively to a list

The **<rich:orderingList>** component has a possibility to hide any of the controls by pairs using following attributes:

- *"orderControlsVisible"* attribute has two values: true or false. If false Up and Down controls are not displayed.
- *"fastOrderControlsVisible"* attribute has two values: true or false. If false Top and Bottom controls are not displayed.

Table 6.217. Keyboard usage for elements selection

Keys and combinations	Description
CTRL+click	Inverts selection for an item
SHIFT+click	Selects all rows from active one to a clicked row if they differ, else select the actve row. All other selections are cleared
CTRL+A	Selects all elements inside the list if some active element is already present in a list
Up, Down arrows	Changes the active and selected elements to the next or previous in a list

Table 6.218. Keyboard usage for elements reordering

Keys and combinations	Description
Page Up	Moves selected set to the top of a list
Page Down	Moves selected set to the bottomof a list

Keys and combinations	Description
CTRL+Up arrow	Moves selected item to one position upper
CTRL+Down arrow	Moves selected item to one position lower

6.58.6. JavaScript API

Table 6.219. JavaScript API

Function	Description
Hide()	Hides ordering control
Show()	Shows ordering control
isShown()	Checks if current control is shown
Enable()	Enables ordering control
Disable()	Disables ordering control
isEnabled()	Checksif current control is enabled
moveUp()	Moves up selected item in the list
moveDown()	Moves down selected item in the list
moveTop()	Moves top selected item in the list
moveBottom()	Moves bottom selected item in the list
getSelection()	Returns currently selected item
getItems()	Returns the collection of all items

6.58.7. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:orderingList>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets style classes used by a **<rich:orderingList>** component

6.58.8. Skin Parameters Redefinition

Table 6.220. Skin parameters redefinition for a wrapper element of a list

Skin parameters	CSS properties
tableBackgroundColor	background-color

Skin parameters	CSS properties
tableBorderColor	border-color

Table 6.221. Skin parameters redefinition for a header cell of a list

Skin parameters	CSS properties
trimColor	background-color
generalTextColor	color
headerFamilyFont	font-family
headerSizeFont	font-size
tableBorderWidth	border-right-width
tableBorderWidth	border-bottom-width
tableBorderColor	border-right-color
tableBorderColor	border-bottom-color

Table 6.222. Skin parameters redefinition for caption element

Skin parameters	CSS properties
headerFamilyFont	font-family
headerSizeFont	font-size
headerWeightFont	font-weight

Table 6.223. Skin parameters redefinition for row element

Skin parameters	CSS properties
headerGradientColor	background-color

Table 6.224. Skin parameters redefinition for selected row element

Skin parameters	CSS properties
additionalBackgroundColor	background-color

Table 6.225. Skin parameters redefinition for cell element

Skin parameters	CSS properties
generalTextColor	color
generalFamilyFont	font-family
generalSizeFont	font-size

Table 6.226. Skin parameters redefinition for selected cell element

Skin parameters	CSS properties
generalTextColor	color
generalFamilyFont	font-family
generalSizeFont	font-size

Table 6.227. Skin parameters redefinition for active cell element

Skin parameters	CSS properties
generalFamilyFont	font-family
generalSizeFont	font-size

Table 6.228. Skin parameters redefinition for a button

Skin parameters	CSS properties
trimColor	background-color
generalTextColor	color
headerFamilyFont	font-family
headerSizeFont	font-size

Table 6.229. Skin parameters redefinition for a disabled button

Skin parameters	CSS properties
trimColor	background-color
tabDisabledTextColor	color
headerFamilyFont	font-family
headerSizeFont	font-size

Table 6.230. Skin parameters redefinition for a button highlight

Skin parameters	CSS properties
trimColor	background-color
selectControlColor	border-color
tableBorderWidth	border-width
headerFamilyFont	font-family
headerSizeFont	font-size
generalTextColor	color

Table 6.231. Skin parameters redefinition for a pressed button

Skin parameters	CSS properties
additionalBackgroundColor	background-color
tableBorderColor	border-color
tableBorderWidth	border-width
headerFamilyFont	font-family
headerSizeFont	font-size
generalTextColor	color

Table 6.232. Skin parameters redefinition for a button content

Skin parameters	CSS properties
headerFamilyFont	font-family
headerSizeFont	font-size

Table 6.233. Skin parameters redefinition for a button selection

Skin parameters	CSS properties
generalTextColor	color

Table 6.234. Skin parameters redefinition for top, bottom, up, down controls and for controls in disabled state

Skin parameters	CSS properties
panelBorderColor	border-color

6.58.9. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

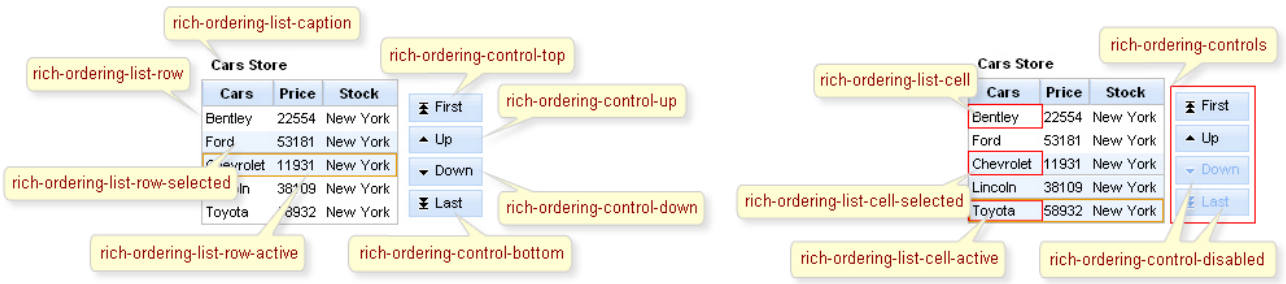


Figure 6.76. Style classes

Table 6.235. Classes names that define a list representation

Class name	Description
rich-ordering-list-body	Defines styles for a wrapper table element of an orderingList
rich-ordering-list-output	Defines styles for a wrapper element of a list
rich-ordering-list-items	Defines styles for a wrapper table element of items in the list
rich-ordering-list-content	Defines styles for a list content
rich-ordering-list-header	Defines styles for a wrapper element for a list header
rich-ordering-list-table-header	Defines styles for a wrapper <tr> element for a list header
rich-ordering-list-table-header-cell	Defines styles for a header cell

Table 6.236. Classes names that define a caption representation

Class name	Description
rich-ordering-list-caption	Defines styles for a caption
rich-ordering-list-caption-disabled	Defines styles for a caption in disabled state
rich-ordering-list-caption-active	Defines styles for a caption in active state

Table 6.237. Classes names that define rows representation

Class name	Description
rich-ordering-list-row	Defines styles for a row
rich-ordering-list-row-selected	Defines styles for a selected row
rich-ordering-list-row-active	Defines styles for an active row
rich-ordering-list-row-disabled	Defines styles for a disabled row

Table 6.238. Classes names that define cells representation

Class name	Description
rich-ordering-list-cell	Defines styles for a cell
rich-ordering-list-cell-selected	Defines styles for a selected cell
rich-ordering-list-cell-active	Defines styles for an active cell
rich-ordering-list-cell-disabled	Defines styles for a disabled cell

Table 6.239. Classes names that define a button representation

Class name	Description
rich-ordering-list-button	Defines styles for a button
rich-ordering-list-button-disabled	Defines styles for a disabled button
rich-ordering-list-button-light	Defines styles for a button highlight
rich-ordering-list-button-press	Defines styles for a pressed button
rich-ordering-list-button-content	Defines styles for a button content
rich-ordering-list-button-selection	Defines styles for a button selection
rich-ordering-list-button-valign	Defines styles for a wrapper <td> element for buttons vertical align
rich-ordering-list-button-layout	Defines styles for a wrapper element of buttons layout

Table 6.240. Classes names that define controls representation

Class name	Description
rich-ordering-controls	Defines styles for a controls group
rich-ordering-control-top	Defines styles for a "top" control
rich-ordering-control-bottom	Defines styles for a "bottom" control
rich-ordering-control-up	Defines styles for a "up" control
rich-ordering-control-down	Defines styles for a "down" control
rich-ordering-control-disabled	Defines styles for controls in disabled state

In order to redefine styles for all **<rich:orderingList>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:orderingList>** components, define your own style classes in the corresponding **<rich:orderingList>** component attributes.

6.58.10. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/orderingList.jsf?c=orderingList] you can see an example of **<rich:orderingList>** usage and sources for the given example.

6.59. < rich:paint2D >

6.59.1. Description

Create image by painting from a managed bean method, same as *"paint"* (Graphics2D) in *"SWING"* components.

Figure 6.77. Paint2D component

6.59.2. Key Features

- Simple Graphics2D - painting style directly on the Web page
- Supports client/server caching for generated images
- Fully supports *"JPEG"* (24-bit, default), *"GIF"* (8-bit with transparency), and *"PNG"* (32-bit with transparency) formats for sending generated images
- Easily customizable borders and white space to wrap the image
- Dynamically settable paint parameters using tag attributes

Table 6.241. rich : paint2D attributes

Attribute Name	Description
align	bottom|middle|top|left|right Deprecated. This attribute specifies the position of an IMG, OBJECT, or APPLET with respect to its context. The following values for align concern the object's position with respect to surrounding text: * bottom: means that the bottom of the object should be vertically aligned with the current baseline. This is the default value. * middle: means that the center of the object should be vertically aligned with the current baseline. * top: means that the top of the object should be vertically aligned with the top of the current text line
bgcolor	Background color of painted image. Default value is 'transparent' which means no background fill. Hex colors can be used, as well as common color names. Invalid values are treated as transparent. Note, that JPEG format doesn't support transparency, and transparent background is painted black. Also note,

Attribute Name	Description
	that several browsers (e.g. IE6) do not support PNG transparency
binding	The attribute takes a value-binding expression for a component property of a backing bean
border	Deprecated. This attribute specifies the width of an IMG or OBJECT border, in pixels. The default value for this attribute depends on the user agent
cacheable	Supported (or not) client/server caching for generated images. Caching on client supported by properly sending and processing of HTTP headers (Last-Modified, Expires, If-Modified-Since, etc.) Server-side caching is supported by application-scope object cache. For build of cache key use "value" attribute, serialized to URI
converter	Id of Converter to be used or reference to a Converter
data	Value calculated at render time and stored in Image URI (as part of cache Key), at paint time passed to a paint method. It can be used for updating cache at change of image generating conditions, and for creating paint beans as "Lightweight" pattern components (request scope). IMPORTANT: Since serialized data stored in URI, avoid using big objects
format	format Name of format for sending a generated image. It currently supports "jpeg" (24 bit, default), "gif" (8 bit with transparency), "png" (32 bit with transparency)
height	Height in pixels of image (for paint canvas and HTML attribute)
hspace	Deprecated. This attribute specifies the amount of white space to be inserted to the left and right of an IMG, APPLET, or OBJECT. The default value is not specified, but is generally a small, non-zero length
id	Every component may have a unique id that is automatically created if omitted
lang	Code describing the language used in the generated markup for this component
paint	The method calls expression to paint Image on prepared Buffered image. It must have two parameters with a type of java.awt.Graphics2D (graphics to paint)

Attribute Name	Description
	and Object (restored from URI "data" property). For painting used 32-bit RGBA color model (for 8-bit images used Diffusion filtration before sending)
rendered	If "false", this component is not rendered
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
title	Advisory title information about markup elements generated for this component
value	The initial value to set when rendered for the first time
vspace	Deprecated. This attribute specifies the amount of white space to be inserted above and below an IMG, APPLET, or OBJECT. The default value is not specified, but is generally a small, non-zero length
width	Width in pixels of image (for paint canvas and HTML attribute)

Table 6.242. Component identification parameters

Name	Value
component-type	org.richfaces.Paint2D
component-class	org.richfaces.component.html.HtmlPaint2D
component-family	javax.faces.Output
renderer-type	org.richfaces.Paint2DRenderer
tag-class	org.richfaces.taglib.Paint2DTag

6.59.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:paint2D paint="#{paint2D.paint}" data="#{paint2DModel}"/>
...
```

Here *"paint"* specifies the method performing drawing and *"data"* specifies Managed Bean property keeping the data used by the method.

6.59.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlPaint2D;
...
HtmlPaint2D myImage = new HtmlPaint2D();
...
```

6.59.5. Details of Usage

The example shows two main attributes of the component:

- *"paint"*

  Specify a method receiving an object specified in data as a parameter and sending graphical information into the stream

- *"data"*

  Specifies a bean class keeping your data for rendering

  Note:
  data object should implement serializable interface

The *"format"* attribute of the component defines a format of visual data passing to the server.

Generated data can be used as a cacheable or non-cacheable resource. It's defined with *"cacheable"* attribute. If cache support is turned on, a key is created in URI with a mix of size (width/height), *"paint"* method, *"format"* and *"data"* attributes.

Example:

Example:

```
paintBean.java:

    public void paint(Graphics2D g2, Object obj) {
        // code that gets data from the data Bean (PaintData)
        PaintData data = (PaintData) obj;
        ...
        // a code drawing a rectangle
        g2.drawRect(0, 0, data.Width, data.Height);
        ...
        // some more code placing graphical data into g2 stream below
    }

dataBean.java:

    public class PaintData implements Serializable{
        private static final long serialVersionUID = 1L;
        Integer Width=100;
        Integer Height=50;
        ...
```

```
    }

page.xhtml:
...
    <rich:paint2D paint="#{paint2D.paint}" data="#{paint2DModel.data}"/>
...
```

6.59.6. Look-and-Feel Customization

Paint2D has no skin parameters and special *style classes*, as it consists of one element generated with a your method on the server.

To define some style properties such as an indent or a border, it's possible to use *"style"* and *"styleClass"* attributes on the component.

6.59.7. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/paint2D.jsf?c=paint2d] you can see the example of **<rich:paint2D>** usage and sources for the given example.

6.60. < rich:panel >

6.60.1. Description

A skinnable panel that is rendered as a bordered rectangle with or without a header.

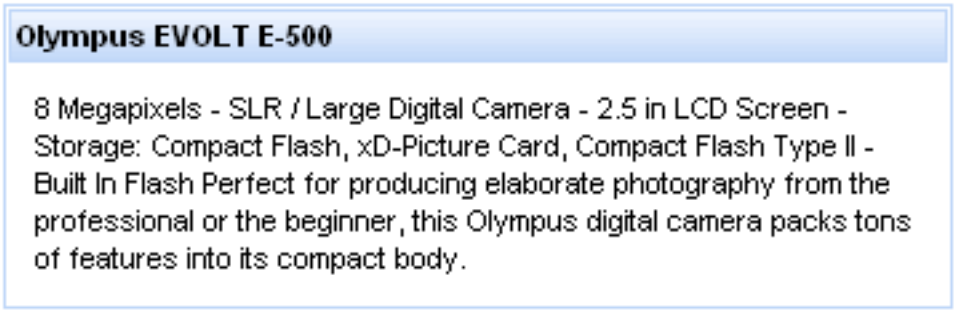


Figure 6.78. Panel component

6.60.2. Key Features

- Highly customizable look and feel
- Support for any content inside
- Header adding feature

Table 6.243. rich : panel attributes

Attribute Name	Description
binding	

Attribute Name	Description
	The attribute takes a value-binding expression for a component property of a backing bean
bodyClass	A class that defines a style for a panel content
header	Label text appears on a panel header
headerClass	A class that defines a style for a panel header
id	Every component may have a unique id that is automatically created if omitted
onclick	HTML: a script expression; a pointer button is clicked
ondblclick	HTML: a script expression; a pointer button is double-clicked
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
rendered	If "false", this component is not rendered
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute

Table 6.244. Component identification parameters

Name	Value
component-type	org.richfaces.panel
component-class	org.richfaces.component.html.HtmlPanel
component-family	org.richfaces.panel
renderer-type	org.richfaces.PanelRenderer

Name	Value
tag-class	org.richfaces.taglib.PanelTag

6.60.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:panel header="Panel Header">
        ...
        <!--Any Content inside-->
        ...
    </rich:panel>
...
```

6.60.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlPanel;
...
HtmlPanel myPanel = new HtmlPanel();
...
```

6.60.5. Details of Usage

The *"header"* attribute defines text to be represented. If you can use the *"header"* facet, you can even not use the *"header"* attribute.
Example:

```
...
    <rich:panel>
        <f:facet name="header">
            <h:graphicImage value="/images/img1.gif"/>
        </f:facet>
        ...
        <!--Any Content inside-->
        ...
    </rich:panel>
...
```

<rich:panel> components are used to group page content pieces on similarly formatted rectangular panels.

Example:

```
...
    <rich:panel>
        ...
    </rich:panel>
...
```

It's generating on a page in the following way:

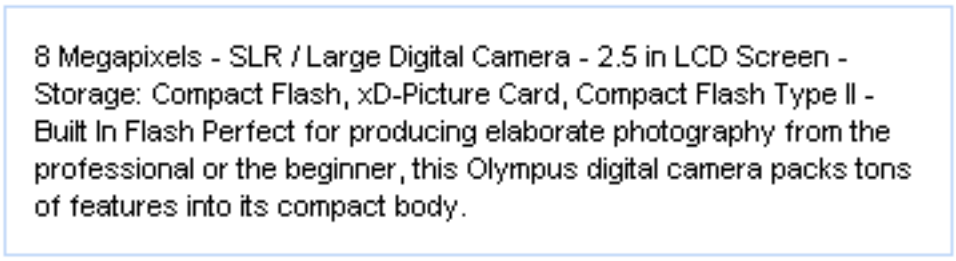


Figure 6.79. Generated panel without header

The example shows that similar rectangular areas are formed with a particular style.

When creating a panel with a header element, one more ** ** element is added with content defined for a header.

Example:

```
...
    <rich:panel>
        <f:facet name="header">
            <h:outputText value="Olympus EVOLT E-500 "/>
        </f:facet>
        ...
    </rich:panel>
...
```

It's displayed on a page in the following way:

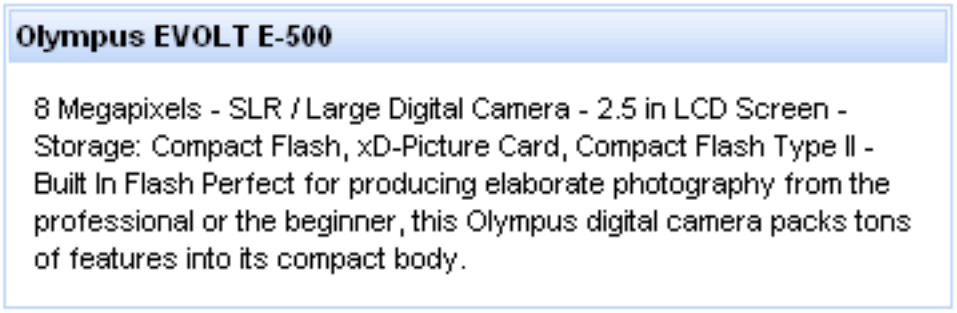


Figure 6.80. Panel with header

As it has been mentioned above, the component is mostly used for a page style definition, hence the main attributes are style ones.

- *"styleClass"* and "style"
- *"headerClass"* and *"headerStyle"*
- *"bodyClass"* and *"bodyStyle"*

Moreover, to add e.g. some JavaScript effects, events defined on it are used.

- "onmouseover"
- "onclick"
- "onmouseout"
- etc.

6.60.7. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:panel>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:panel>** component

6.60.8. Skin Parameters Redefinition

Table 6.245. Skin parameters redefinition for a whole component

Skin parameters	CSS properties
generalBackgroundColor	background-color
panelBorderColor	border-color

Table 6.246. Skin parameters redefinition for a header element

Skin parameters	CSS properties
headerBackgroundColor	background-color
headerBackgroundColor	border-color
headerSizeFont	font-size
headerTextColor	color
headerWeightFont	font-weight
headerFamilyFont	font-family

Table 6.247. Skin parameters redefinition for a body element

Skin parameters	CSS properties
generalSizeFont	font-size
generalTextColor	color
generalFamilyFont	font-family

6.60.9. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

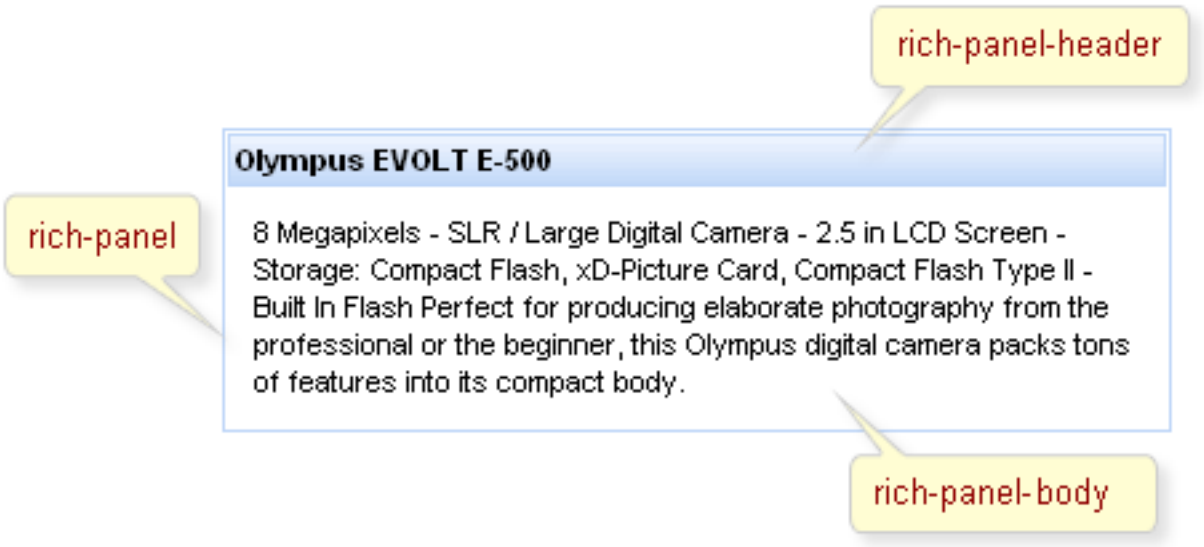


Figure 6.81. Style classes

Table 6.248. Classes names that define a component appearance

Class name	Class description
rich-panel	Defines styles for a wrapper element of a component
rich-panel-header	Defines styles for a header element
rich-panel-body	Defines styles for a body elemnt

In order to redefine styles for all **<rich:panel>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:panel>** components, define your own style classes in the corresponding **<rich:panel>** attribute.

CSS code piece used on a page:

Example:

```
...
    .rich-panel-header{
        background-color:#F99;
    }
    .myClass{
        font-style:italic;
    }
...
```

Hence, a header class is redefined for all panels (its color changed) of this page and body class is extended with the custom style properties (font-style) for this particular panel. As a result, the panel with a header redefined color and a text style in body is got.

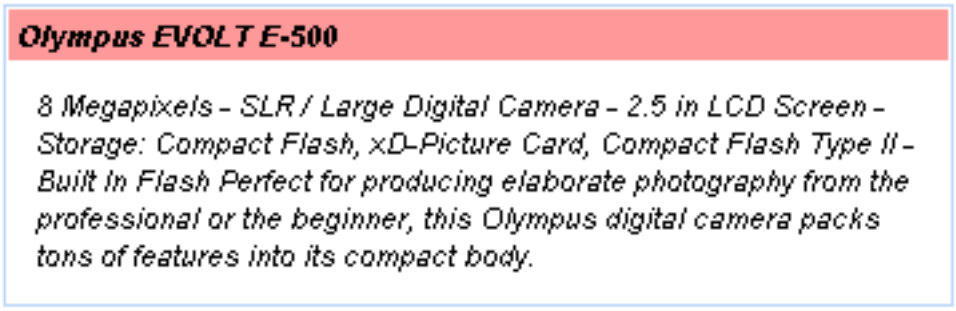


Figure 6.82. Panel with redefined header and body text style

6.60.10. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/panel.jsf?c=panel] you can see the example of **<rich:panel>** usage and sources for the given example.

6.61. < rich:panelBar >

6.61.1. Description

panelBar is used for grouping any content which is loaded on the client side and appears as groups divided on child panels after the header is clicked.

Figure 6.83. PanelBar with content inside

6.61.2. Key Features

- Skinnable slide panel and child items

- Groups any content inside each panel

Table 6.249. rich : panelBar attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
contentClass	The component content style class
contentStyle	The component content style
converter	Id of Converter to be used or reference to a Converter
converterMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the converter message, replacing any message that comes from the converter.
headerClass	The component header style class
headerClassActive	The component header style class active
headerStyle	The component header style
headerStyleActive	The component header style active
height	The height of the slide panel. Might be defined as pixels or as percentage. The default height is 100%
id	Every component may have a unique id that is automatically created if omitted
immediate	A flag indicating that this component value must be converted and validated immediately (that is, during Apply Request Values phase), rather than waiting until a Process Validations phase
onclick	JavaScript code for call before header onclick
rendered	If "false", this component is not rendered
required	If "true", this component is checked for non-empty input
requiredMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the validation message for the "required" facility, if the "required" facility is used.
selectedPanel	Attribure defines name of selected item
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute.

Attribute Name	Description
validator	MethodBinding pointing at a method that is called during Process Validations phase of the request processing lifecycle, to validate the current value of this component
validatorMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the validator message, replacing any message that comes from the validator.
value	The initial value to set when rendered for the first time
valueChangeListener	Listener for value changes
width	The width of the slide panel. Might be defined as pixels or as percentage. The default width is 100%

Table 6.250. Component identification parameters

Name	Value
component-type	org.richfaces.PanelBar
component-class	org.richfaces.component.html.HtmlPanelBar
component-family	org.richfaces.PanelBar
renderer-type	org.richfaces.PanelBarRenderer
tag-class	org.richfaces.taglib.PanelBarTag

6.61.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:panelBar>
        <!--//... -->
        <rich:panelBarItem label="Canon">
            ...
        </rich:panelBarItem>
        <rich:panelBarItem label="Nikon">
            ...
        </rich:panelBarItem>
    </rich:panelBar>
...
```

6.61.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlPanelBar;
...
HtmlPanelBar myBar = new HtmlPanelBar();
...
```

6.61.5. Details of Usage

As it was mentioned above, panelBar is used for grouping any content on the client, thus its customization deals only with specification of sizes and styles for rendering.

"width" and *"height"* (both are 100% on default) attributes stand apart.

Style attributes are described further.

panelBar could contain any number of child panelBarItem components inside, which content is uploaded onto the client and headers are controls to open the corresponding child element.

6.61.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:panelBar>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:panelBar>** component

6.61.7. Skin Parameters Redefinition

Table 6.251. Skin parameter redefinition for a whole component

Skin parameter	CSS properties
headerBackgroundColor	border-color

6.61.8. Definition of Custom Style Classes

There is one predefined class for the **<rich:panelBar>** , which is applicable to a whole component, specifying padding, borders, and etc.

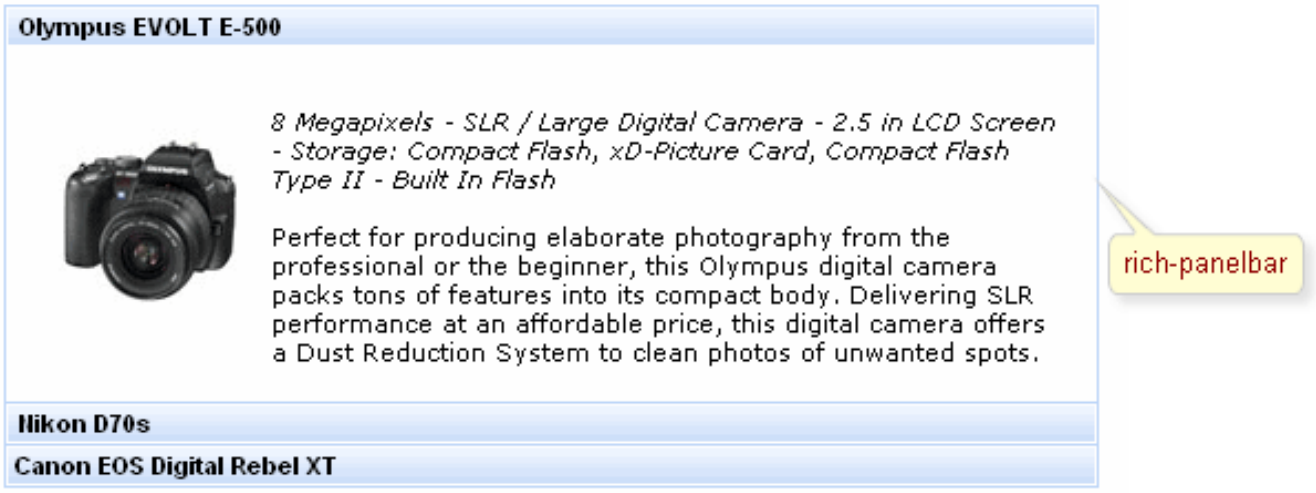


Figure 6.84. Style class

Table 6.252. Class name that define a component appearance

Class name	Class description
rich-panelbar	Defines styles for a wrapper element of a component

Other classes responsible for elements rendering are described for child **<rich:panelBarItem>** elements and could be found in the components chapters.

Table 6.253. Style component classes

A class attribute	A component element defined by an attribute
styleClass	Applicable to a whole component (together with headers)
headerClass	Applicable to a header element
contentClass	Applicable to a content

In order to redefine styles for all **<rich:panelBar>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:panelBar>** components, define your own style classes in the corresponding **<rich:panelBar>** attributes.

CSS code piece used on a page:

Example:

```
...
    . rich-panelbar{
        padding:10px;
```

```
    }
    .myClass{
        font-style:italic;
    }
...
```

When using headerClass and headerClassActive attributes the declaration of headerClass should precede the one of headerClassActive:

Example:

```
...
    .headerClass{
        ...
    }
    .headerClassActive{
        ...
    }
...
```

The component is defined in the following way:

Example:

```
...
    <rich:panelBar contentClass="myClass">
        <rich:panelBarItem>
        ...
        </rich:panelBarItem>
    </rich:panelBar>
...
```

Hence, padding for all **<rich:panelBar>** is changed on a page as well as a font for particular **<rich:panelBarItem>** content.

6.61.9. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/panelBar.jsf?c=panelBar] you can see the example of **<rich:panelBar>** usage and sources for the given example.

6.62. < rich:panelBarItem >

6.62.1. Description

panelBarItem is used for grouping any content inside within one panelBar which is loaded on client side and appears as groups divided on child panels after header is clicked.

Figure 6.85. PanelBarItem component

6.62.2. Key Features

- Highly customizable look and feel
- Groups any content inside each Panels

Table 6.254. rich : panelBarItem attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
contentClass	The component content style class
contentStyle	The component content style
headerClass	The component header style class
headerClassActive	The component header style class active
headerStyle	The component header style
headerStyleActive	The component header style active
id	Every component may have a unique id that is automatically created if omitted
label	Label text appears on a panel item header
name	Attribute defines item name
rendered	If "false", this component is not rendered

Table 6.255. Component identification parameters

Name	Value
component-type	org.richfaces.PanelBarItem
component-class	org.richfaces.component.html.HtmlPanelBarItem
component-family	org.richfaces.PanelBarItem
renderer-type	org.richfaces.PanelBarItemRenderer
tag-class	org.richfaces.taglib.PanelBarItemTag

6.62.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:panelBar>
        <rich:panelBarItem label="Canon">
            ...
        </rich:panelBarItem>
        <rich:panelBarItem label="Nikon">
            ...
        </rich:panelBarItem>
    </rich:panelBar>
...
```

6.62.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlPanelBarItem;
...
HtmlPanelBarItem myBarItem = new HtmlPanelBarItem();
...
```

6.62.5. Details of Usage

The *"label"* attribute defines text to be represented. If you can use the *"label"* facet, you can even not use the *"label"* attribute.
Example:

```
...
    <rich:panelBarItem...>
        <f:facet name="label">
            <h:graphicImage value="/images/img1.gif"/>
        </f:facet>
        ...
        <!--Any Content inside-->
```

```
        ...
    </rich:panelBarItem>
...
```

As it was mentioned above, panelBarItem is used for grouping any content inside within one panelBar, thus its customization deals only with specification of sizes and styles for rendering.

panelBar could contain any number of child panelBarItem components inside, which content is uploaded onto the client and headers are controls to open the corresponding child element.

6.62.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:panelBarItem>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:panelBarItem>** component

6.62.7. Skin Parameters Redefinition

Table 6.256. Skin parameters redefinition for a content

Skin parameters	CSS properties
generalTextColor	color
preferableDataSizeFont	font-size
preferableDataFamilyFont	font-family

Table 6.257. Skin parameters redefinition for a header element (active or inactive)

Skin parameters	CSS properties
headerTextColor	color
headerBackgroundColor	background-color
headerSizeFont	font-size
headerWeightFont	font-weight
headerFamilyFont	font-family

6.62.8. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

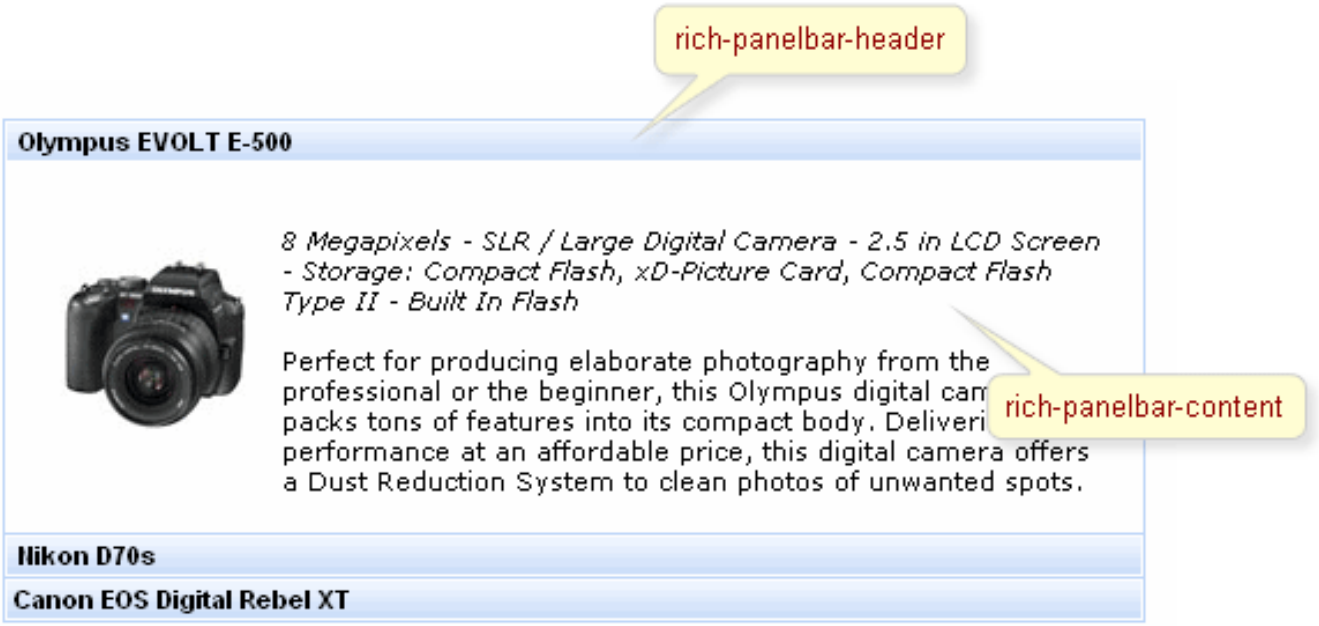


Figure 6.86. Style classes

Table 6.258. Classes names that define a component appearance

Class name	Class description
rich-panelbar-header	Defines styles for a wrapper element of a header element
rich-panelbar-header-act	Defines styles for a wrapper element of an active header element
rich-panelbar-content	Defines styles for a content

Table 6.259. Style component classes

A class attribute	A component element defined by an attribute
headerClass	Applicable to a header element
contentClass	Applicable to a content

In order to redefine styles for all **<rich:panelBarItem>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:panelBarItem>** components, define your own style classes in the corresponding **<rich:panelBarItem>** attributes.

CSS code piece used on a page:

Example:

```
...
    .rich-panelbar-header{
```

```
        font-size:14px;
    }
    .myClass{
        font-style:italic;
    }
...
```

The component is defined in the following way:

Example:

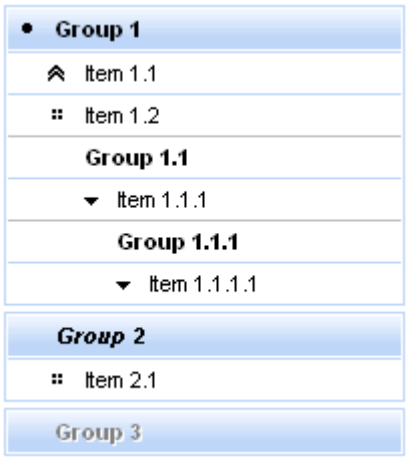
```
...
    <rich:panelBar>
        <rich:panelBarItem contentClass="myClass">
            ...
        </rich:panelBarItem>
    </rich:panelBar>
...
```

Hence, a font size of all **<rich:panelBarItem>** headers is changed on a page as well as a font for the particular **<rich:panelBarItem>** content.

6.63. < rich:panelMenu >

6.63.1. Description

The **<rich:panelMenu>** component is used to define an inline vertical menu on a page.



6.63.2. Key Features

- Highly customizable look and feel
- Different submission modes
- Collapsing/expanding sublevels with optional request sending
- Custom and predefined icons support
- Disablement support

Table 6.260. rich : panelMenu attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
converter	Id of Converter to be used or reference to a Converter
converterMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the converter message, replacing any message that comes from the converter
disabled	If true sets state of the item to disabled state. false is default.
disabledGroupClass	Space-separated list of CSS style class(es) that are be applied to disabled group of this component
disabledGroupStyle	CSS style(s) is/are to be applied to disabled group when this component is rendered
disabledItemClass	Space-separated list of CSS style class(es) that are be applied to disabled item of this component
disabledItemStyle	CSS style(s) is/are to be applied to disabled item when this component is rendered.
event	Defines the event on the representation element that triggers the submenu's expand/collapse. (default=onclick)
expandMode	Set the submission mode for all panel menu groups after expand/collapse except ones where this attribute redefined. (ajax, server, none(Default))
expandSingle	Whether only one panel menu node on top level can be opened at a time. If the value of this attribute is true, the previously opened node on the top level is closed. If the value is false, the node is left opened. The default value is false.
groupClass	Space-separated list of CSS style class(es) that are be applied to group of this component
groupStyle	CSS style(s) is/are to be applied to group when this component is rendered
hoveredGroupClass	Space-separated list of CSS style class(es) that are be applied to hovered group of this component
hoveredGroupStyle	CSS style(s) is/are to be applied to hovered group when this component is rendered

Attribute Name	Description
hoveredItemClass	Space-separated list of CSS style class(es) that are be applied to hovered item of this component
hoveredItemStyle	CSS style(s) is/are to be applied to hovered item when this component is rendered
iconCollapsedGroup	Path to the icon to be displayed for the collapsed Group state
iconCollapsedTopGroup	Path to the icon to be displayed for the collapsed top group state
iconDisabledGroup	Path to the icon to be displayed for the disabled group state
iconDisabledItem	Path to the icon to be displayed for the disabled item state
iconExpandedGroup	Path to the icon to be displayed for the expanded Group state
iconExpandedTopGroup	Path to the icon to be displayed for the expanded top group state
iconGroupPosition	Position of the icon (left, right none (default)) for the group icon
iconGroupTopPosition	Position of the icon (left, right none (default)) for the top group icon
iconItem	Path to the icon to be displayed for the enabled item state
iconItemPosition	Position of the icon (left, right none (default)) for the item icon
iconItemTopPosition	Position of the icon (left, right none (default)) for the top item icon
iconTopDisabledItem	Path to the icon to be displayed for the disabled top item state
iconTopDisableGroup	Path to the icon to be displayed for the disabled top Group state
iconTopItem	Path to the icon to be displayed for the enabled top item state
id	Every component may have a unique id that is automatically created if omitted

Attribute Name	Description
immediate	A flag indicating that this component value must be converted and validated immediately (that is, during Apply Request Values phase), rather than waiting until a Process Validations phase
itemClass	Space-separated list of CSS style class(es) that are be applied to item of this component
itemStyle	CSS style(s) is/are to be applied to item when this component is rendered.
mode	Set the submission mode for all panel menu items on the panel menu except ones where this attribute redefined. (ajax, server,(Default), none)
onclick	HTML: a script expression; a pointer button is clicked
ondblclick	HTML: a script expression; a pointer button is double-clicked
ongroupcollapse	HTML: script expression; some group was closed
ongroupexpand	HTML: script expression; some group was activated
onitemhover	HTML: script expression; some item was hovered
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: script expression; a pointer was moved within.
onmouseout	HTML: script expression; a pointer was moved away.
onmouseover	HTML: script expression; a pointer was moved onto.
onmouseup	HTML: script expression; a pointer button is released
rendered	If "false", this component is not rendered
required	If "true", this component is checked for non-empty input
requiredMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the validation message for the "required" facility, if the "required" facility is used

Attribute Name	Description
selectedChild	contain the name or the clientId of any of the item or group, the child defined in this attribute should be highlighted on PanelMenu rendering
style	The CSS style for the panel menu.
styleClass	The CSS class for the panel menu.
topGroupClass	Space-separated list of CSS style class(es) that are be applied to top group of this component
topGroupStyle	CSS style(s) is/are to be applied to top group when this component is rendered
topItemClass	Space-separated list of CSS style class(es) that are be applied to top item of this component
topItemStyle	CSS style(s) is/are to be applied to top item when this component is rendered
validator	MethodBinding pointing at a method that is called during Process Validations phase of the request processing lifecycle, to validate the current value of this component
validatorMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the validator message, replacing any message that comes from the validator
value	The initial value to set when rendered for the first time
valueChangeListener	Listener for value changes
width	Set minimal width for the menu.

Table 6.261. Component identification parameters

Name	Value
component-type	org.richfaces.PanelMenu
component-class	org.richfaces.component.html.HtmlPanelMenu
component-family	org.richfaces.PanelMenu
renderer-type	org.richfaces.PanelMenuRenderer
tag-class	org.richfaces.taglib.PanelMenuTag

6.63.3. Creating the Component with a Page Tag

To create the simplest variant on a page use the following syntax:

Example:

```
...
      <rich:panelMenu event="onmouseover">
            <!--Nested panelMenu components-->
      </rich:panelMenu>
...
```

6.63.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlPanelMenu;
...
HtmlPanelMenu myPanelMenu = new HtmlPanelMenu();
...
```

6.63.5. Details of Usage

All attributes are not required.

Use *"event"* attribute to define an event for appearance of collapsing/expanding sublevels. Default value is *"onclick"* . An example could be seen below.

Example:

```
...
      <rich:panelMenu event="onmouseover">
            <!--Nested panelMenu components-->
      </rich:panelMenu>
...
```

Switching mode could be chosen with the *"mode"* attribute for all panelMenu items except ones where this attribute was redefined. By default all items send traditional request.

The *"expandMode"* attribute defines the submission modes for all collapsing/expanding panelMenu groups except ones where this attribute was redefined.

The *"mode"* and *"expandMode"* attributes could be used with three possible parameters.

- Server (default)

Regular form submission request is used.

- Ajax

Ajax submission is used for switching.

- None

"Action" and *"ActionListener"* item's attributes are ignored. Items don't fire any submits itself. Behavior is fully defined by the components nested into items.

Example:

```
...
      <rich:panelMenu event="onclick" submitMode="none">
            < rich:panelMenuItem label="Link to external page">
                  <h:outputLink ... >
            <rich:panelMenuItem>
      </rich:panelMenu>
...
```

Note:

As the **<rich:panelMenu>** component doesn't provide its own form, use it between <h:form> and </h:form> tags.

The *"expandSingle"* attribute is defined for expanding more than one submenu on the same level. The default value is *"false"* . If it's true the previously opened group on the top level closes before opening another one. See the picture below.

Figure 6.87. Using the *"expandSingle"* attribute

The *"selectedChild"* attribute is used for defining the name of the selected group or item. An example for group is placed below:

Here is an example:

Example:

```
...
      <rich:panelMenu selectedChild="thisChild">
        <rich:panelMenuGroup label="Group1" name="thisChild">
          <!--Nested panelMenu components-->
        </rich:panelMenuGroup>
      </rich:panelMenu>
...
```

6.63.6. JavaScript API

In Java Script code for expanding/collapsing group element creation it's necessary to use Expand()/ Collapse() function.

Table 6.262. JavaScript API

Function	Description
Expand()	Expands group element
Collapse()	Collapses group element

6.63.7. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.*

There are no skin parameters. To redefine the appearance of all **<rich:panelMenu>** components at once, you should add to your style sheets the *style class* used by a **<rich:panelMenu>** component.

6.63.8. Definition of Custom Style Classes

Table 6.263. Classes names that define a component appearance

Class name	Class description
rich-panel-menu	Defines styles for a wrapper element of a component

In order to redefine styles for all **<rich:panelMenu>** components on a page using CSS, it's enough to create a class with the same name and define necessary properties in it.

To change styles of particular **<rich:panelMenu>** components, define your own style class in the corresponding **<rich:panelMenu>** attributes.

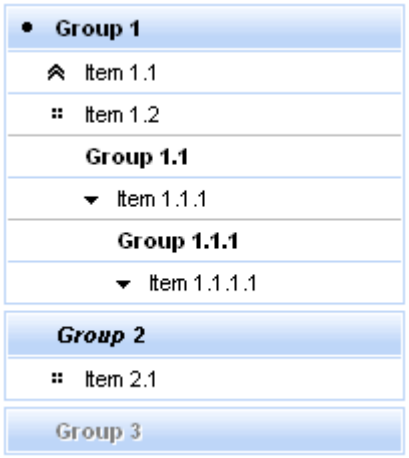
6.63.9. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/panelMenu.jsf?c=panelMenu] you can see the example of **<rich:panelMenu>** usage and sources for the given example.

6.64. < rich:panelMenuGroup >

6.64.1. Description

The **<rich:panelMenuGroup>** component is used to define an expandable group of items inside the panel menu or other group.



6.64.2. Key Features

- Highly customizable look-and-feel

- Different submission modes inside every group
- Optional submissions on expand collapse groups
- Custom and predefined icons supported
- Support for disabling

Table 6.264. rich : panelMenuGroup attributes

Attribute Name	Description
accesskey	This attribute assigns an access key to an element. An access key is a single character from the document character set. Note: Authors should consider the input method of the expected reader when specifying an accesskey
action	MethodBinding pointing at the application action to be invoked, if this UIComponent is activated by the user, during the Apply Request Values or Invoke Application phase of the request processing lifecycle, depending on the value of the immediate property
actionListener	MethodBinding pointing at method accepting an ActionEvent with return type void
ajaxSingle	if "true", submits ONLY one field/link, instead of all form controls
align	left|center|right|justify [CI] Deprecated. This attribute specifies the horizontal alignment of its element with respect to the surrounding context. Possible values: * left: text lines are rendered flush left. * center: text lines are centered. * right: text lines are rendered flush right. * justify: text lines are justified to both margins. The default depends on the base text direction. For left to right text, the default is align=left, while for right to left text, the default is align=right
alt	For a user agents that cannot display images, forms, or applets, this attribute specifies alternate text. The language of the alternate text is specified by the lang attribute
binding	The attribute takes a value-binding expression for a component property of a backing bean
bypassUpdates	If "true", after process validations phase it skips updates of model beans on a force render response. It can be used for validating components input

Attribute Name	Description
converter	Id of Converter to be used or reference to a Converter
converterMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the converter message, replacing any message that comes from the converter
data	Serialized (on default with JSON) data passed on the client by a developer on AJAX request. It's accessible via "data.foo" syntax
disabled	When set for a form control, this boolean attribute disables the control for user input
disabledClass	Class to be applied to disabled items.
disabledStyle	CSS style rules to be applied to disabled items.
eventsQueue	Name of requests queue to avoid send next request before complete other from same event. Can be used to reduce number of requests of frequently events (key press, mouse move etc.)
expanded	If â##trueâ## group will be displayed expanded initially.
expandMode	Set the submission mode for all panel menu groups after expand/collapse except ones where this attribute redefined. (ajax, server, none(Default))
focus	id of element to set focus after request completed on client side
hoverClass	Class to be applied to hovered items.
hoverStyle	CSS style rules to be applied to hovered items.
iconClass	Class to be applied to icon element.
iconCollapsed	Path to the icon to be displayed for the collapsed item state
iconDisabled	Path to the icon to be displayed for the disabled item state
iconExpanded	Path to the icon to be displayed for the expanded item state
iconStyle	CSS style rules to be applied
id	Every component may have a unique id that is automatically created if omitted

Attribute Name	Description
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response isn't actual now
immediate	A flag indicating that this component value must be converted and validated immediately (that is, during Apply Request Values phase), rather than waiting until a Process Validations phase
label	Displayed node's text
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. If "false" (default) updates all rendered by ajax region components
maxlength	When the type attribute has the value "text" or "password", this attribute specifies the maximum number of characters the user may enter. This number may exceed the specified size, in which case the user agent should offer a scrolling mechanism. The default value for this attribute is an unlimited number
name	'selectedChild' attribute of PanelMenu refers to group/item with the same name
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
onblur	HTML: script expression; the element lost the focus
onchange	HTML: script expression; the element value was changed
onclick	HTML: a script expression; a pointer button is clicked
oncollapse	HTML: script expression; group was closed
oncomplete	JavaScript code for call after request completed on client side
ondblclick	HTML: a script expression; a pointer button is double-clicked
onexpand	HTML: script expression; group was opened
onfocus	HTML: script expression; the element got the focus

Attribute Name	Description
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
onselect	HTML: script expression; The onselect event occurs when a user selects some text in a text field. This attribute may be used with the INPUT and TEXTAREA elements
rendered	If "false", this component is not rendered
requestDelay	Attribute defines the time (in ms.) that the request will be wait in the queue before it is ready to send. When the delay time is over, the request will be sent to the server or removed if the newest 'similar' request is in a queue already
required	If "true", this component is checked for non-empty input
requiredMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the validation message for the "required" facility, if the "required" facility is used
reRender	Id['s] (in format of call UIComponent.findComponent()) of components, rendered in case of AjaxRequest caused by this component. Can be single id, comma-separated list of Id's, or EL Expression with array or Collection
size	This attribute tells the user agent the initial width of the control. The width is given in pixels except when type attribute has the value "text" or "password". In that case, its value refers to the (integer) number of characters

Attribute Name	Description
status	ID (in format of call UIComponent.findComponent()) of Request status component
style	CSS style(s) to be applied when this component is rendered.
styleClass	Corresponds to the HTML class attribute.
tabindex	This attribute specifies the position of the current element in the tabbing order for the current document. This value must be a number between 0 and 32767. User agents should ignore leading zeros
target	Target frame for action to execute.
timeout	Response waiting time on a particular request. If a response is not received during this time, the request is aborted
validator	MethodBinding pointing at a method that is called during Process Validations phase of the request processing lifecycle, to validate the current value of this component
validatorMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the validator message, replacing any message that comes from the validator
value	The initial value to set when rendered for the first time
valueChangeListener	Listener for value changes

Table 6.265. Component identification parameters

Name	Value
component-type	org.richfaces.PanelMenuGroup
component-class	org.richfaces.component.html.HtmlPanelMenuGroup
component-family	org.richfaces.PanelMenuGroup
renderer-type	org.richfaces.PanelMenuGroupRenderer
tag-class	org.richfaces.taglib.PanelMenuGroupTag

6.64.3. Creating the Component with a Page Tag

To create the simplest variant on a page use the following syntax:

Example:

```
...
      <rich:panelMenu>
            <rich:panelMenuGroup label="Group1">
                  <!--Nested panelMenu components-->
            </rich:panelMenuGroup>
      </rich:panelMenu>
...
```

6.64.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlPanelMenuGroup;
...
HtmlPanelMenuGroup myPanelMenuGroup = new HtmlPanelMenuGroup();
...
```

6.64.5. Details of Usage

All attributes except *"label"* are optional. The *"label"* attribute defines text to be represented.

Switching mode could be chosen with the *"expandMode"* attribute for the concrete panelMenu group.

The *"expandMode"* attribute could be used with three possible parameters:

- Server (default)

Regular form submission request is used.

- Ajax

Ajax submission is used for switching.

- None

"Action" and *"ActionListener"* attributes are ignored. Items don't fire any submits itself. Behavior is fully defined by the components nested into items.

There are three icon-related attributes. The *"iconExpanded"* attribute defines an icon for an expanded state. The *"iconCollapsed"* attribute defines an icon for a collapsed state. The *"iconDisabled"* attribute defines an icon for a disabled state.

Default icons are shown on the picture below:

Figure 6.88. Default icons

Here is an example:

Example:

```
...
      <rich:panelMenu>
            <rich:panelMenuGroup label="Group1" iconExpanded="disc"
 iconCollapsed="chevron">
                  <!--Nested panelMenu components-->
            </rich:panelMenuGroup>
      </rich:panelMenu>
...
```

As the result the pictures are shown below. The first one represents the collapsed state, the second one - expanded state:

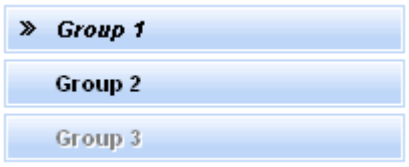


Figure 6.89. Collapsed state

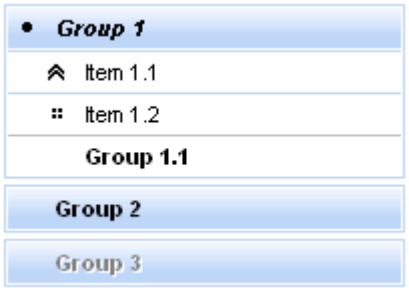


Figure 6.90. Expanded state

It's also possible to define a path to the icon. Simple code is placed below.

```
...
      <rich:panelMenu>
            <rich:panelMenuGroup label="Group1" iconExpanded="\images\img1.gif"
 iconCollapsed="\images\img2.gif">
                  <!--Nested menu components-->
            </rich:panelMenuGroup>
      </rich:panelMenu>
...
```

6.64.6. JavaScript API

In Java Script code for expanding/collapsing group element creation it's necessary to use Expand()/ Collapse() function.

Table 6.266. JavaScript API

Function	Description
Expand()	Expand group element
Collapse()	Collapse group element

6.64.7. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:panelMenuGroup>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:panelMenuGroup>** component

6.64.8. Skin Parameters Redefinition

Table 6.267. Skin parameters redefinition for a table element of the first level group

Skin parameters	CSS properties
headerWeightFont	font-weight
generalFamilyFont	font-family
headerSizeFont	font-size
headerTextColor	color
headerBackgroundColor	background-color

Table 6.268. Skin parameters redefinition for a table element of second and next level groups

Skin parameters	CSS properties
headerWeightFont	font-weight
headerFamilyFont	font-family
headerSizeFont	font-size
generalTextColor	color
tableBorderColor	border-top-color

Table 6.269. Skin parameters redefinition for wrapper div element of the first level group

Skin parameters	CSS properties
panelBorderColor	border-color

Table 6.270. Skin parameters redefinition for a hovered group element

Skin parameters	CSS properties
additionalBackgroundColor	background-color

Table 6.271. Skin parameters redefinition for a disabled group element

Skin parameters	CSS properties
tabDisabledTextColor	color

6.64.9. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

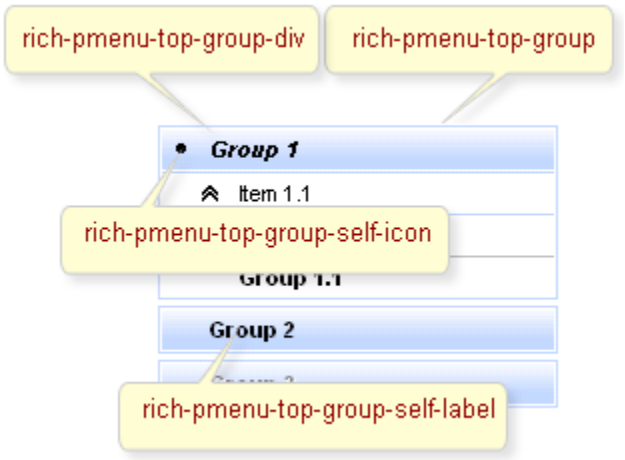


Figure 6.91. Classes names

Table 6.272. Classes names that define an upper level groups

Class name	Description
rich-pmenu-top-group-div	Defines styles for a wrapper element of a top group
rich-pmenu-top-group	Defines styles for a top group
rich-pmenu-top-group-self-icon	Defines styles for a top group icon
rich-pmenu-top-group-self-label	Defines styles for a top group label

Table 6.273. Classes names that define a second and lower level groups

Class name	Description
rich-pmenu-group-div	Defines styles for a wrapper element of a group
rich-pmenu-group	Defines styles for a group

Class name	Description
rich-pmenu-group-self-icon	Defines styles for a group icon
rich-pmenu-group-self-label	Defines styles for a group label

Table 6.274. Classes names that define a group state

Class name	Description
rich-pmenu-hovered-element	Defines styles for a hovered group element
rich-pmenu-disabled-element	Defines styles for a disabled group element

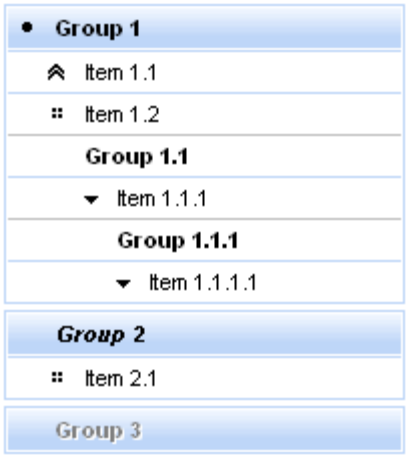
In order to redefine styles for all **<rich:panelMenuGroup>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:panelMenuGroup>** components, define your own style classes in the corresponding **<rich:panelMenuGroup>** attributes.

6.65. < rich:panelMenuItem >

6.65.1. Description

The **<rich:panelMenuItem>** component is used to define a single item inside popup list.



6.65.2. Key Features

- Highly customizable look-and-feel
- Different submission modes
- Optionally supports any content inside
- Custom and predefined icons supported
- Support for disabling

Table 6.275. rich : panelMenuItem attributes

Attribute Name	Description
action	MethodBinding pointing at the application action to be invoked, if this UIComponent is activated by the user, during the Apply Request Values or Invoke Application phase of the request processing lifecycle, depending on the value of the immediate property
actionExpression	actionExpression
actionListener	MethodBinding pointing at method accepting an ActionEvent with return type void
ajaxSingle	if "true", submits ONLY one field/link, instead of all form controls
binding	The attribute takes a value-binding expression for a component property of a backing bean
bypassUpdates	If "true", after process validations phase it skips updates of model beans on a force render response. It can be used for validating components input
data	Serialized (on default with JSON) data passed on the client by a developer on AJAX request. It's accessible via "data.foo" syntax
disabled	If â##trueâ## sets state of the item to disabled state. â##falseâ## is default.
disabledClass	Class to be applied to disabled items.
disabledStyle	CSS style rules to be applied to disabled items.
eventsQueue	Name of requests queue to avoid send next request before complete other from same event. Can be used to reduce number of requests of frequently events (key press, mouse move etc.)
focus	id of element to set focus after request completed on client side
hoverClass	Class to be applied to hovered items.
hoverStyle	CSS style rules to be applied to hovered items.
icon	Path to the icon or the default one name to be displayed for the enabled item state
iconClass	Class to be applied to icon element.
iconDisabled	

Attribute Name	Description
	Path to the icon to be displayed for the disabled item state
iconStyle	CSS style rules to be applied
id	Every component may have a unique id that is automatically created if omitted
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response isn't actual now
immediate	True means, that the default ActionListener should be executed immediately (i.e. during Apply Request Values phase of the request processing lifecycle), rather than waiting until the Invoke Application phase
label	Defines representation text for menuItem.
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. If "false" (default) updates all rendered by ajax region components
mode	Set the submission mode (ajax,server(Default),none)
name	'selectedChild' attribute of PanelMenu refers to group/ item with the same name
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
onclick	HTML: a script expression; a pointer button is clicked
oncomplete	JavaScript code for call after request completed on client side
ondblclick	HTML: a script expression; a pointer button is double-clicked
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down

Attribute Name	Description
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
rendered	If "false", this component is not rendered
requestDelay	Attribute defines the time (in ms.) that the request will be wait in the queue before it is ready to send. When the delay time is over, the request will be sent to the server or removed if the newest 'similar' request is in a queue already
reRender	Id['s] (in format of call UIComponent.findComponent()) of components, rendered in case of AjaxRequest caused by this component. Can be single id, comma-separated list of Id's, or EL Expression with array or Collection
status	ID (in format of call UIComponent.findComponent()) of Request status component
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
target	Target frame for action to execute.
timeout	Response waiting time on a particular request. If a response is not received during this time, the request is aborted
value	The current value for this component

Table 6.276. Component identification parameters

Name	Value
component-type	org.richfaces.PanelMenuItem
component-class	org.richfaces.component.html.HtmlPanelMenuItem
component-family	org.richfaces.PanelMenuItem
renderer-type	org.richfaces.PanelMenuItemRenderer
tag-class	org.richfaces.taglib.PanelMenuItemTag

6.65.3. Creating the Component with a Page Tag

To create the simplest variant on a page use the following syntax:

Example:

```
...
      <rich:panelMenu>
             ...
            <rich:panelMenuItem value="Item1"/>
            ...
      </rich:panelMenu>
...
```

6.65.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlPanelMenuItem;
...
HtmlPanelMenuItem myPanelMenuItem = new HtmlPanelMenuItem();
...
```

6.65.5. Details of Usage

All attributes except *"label"* are optional. The *"label"* attribute defines text to be represented.

The *"mode"* attribute could be used with three possible parameters:

- Server (default)

Regular form submission request is used.

- Ajax

Ajax submission is used for switching.

- None

"Action" and *"ActionListener"* attributes are ignored. Items don't fire any submits itself. Behavior is fully defined by the components nested into items.

Here is an example for value *"none"* :

Example:

```
...
      <rich:panelMenu>
            ...
            <rich:panelMenuItem submitMode="none"
 onclick="document.location.href='http://labs.jboss.com/jbossrichfaces/">
                  <h:outputLink value="http://labs.jboss.com/jbossrichfaces/">
```

```
                        <h:outputText value="RichFaces Home Page"></h:outputText>
                  </h:outputLink>
            </rich:panelMenuItem>
            ...
      </rich:panelMenu>
...
```

There are two icon-related attributes. The *"icon"* attribute defines an icon. The *"iconDisabled"* attribute defines an icon for a disabled item.

Default icons are shown on the picture below:

Figure 6.92. Default icons

Here is an example:

Example:

```
...
      <rich:panelMenu>
            ...
            <rich:panelMenuItem ="Item 1.1" icon="chevronUp" />
            ...
      </rich:panelMenu>
...
```

As the result the picture is shown below:

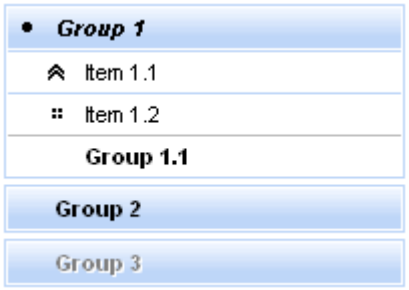


Figure 6.93. Using an *"icon"* attribute

It's also possible to define a path to the icon. Simple code is placed below.

```
...
      <rich:panelMenu>
            ...
            <rich:panelMenuItem ="Item 1.1" icon="\images\img1.gif" />
```

```
            ...
        </rich:panelMenu>
...
```

6.65.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:panelMenuItem>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:panelMenuItem>** component

6.65.7. Skin Parameters Redefinition

Table 6.277. Skin parameters redefinition for a table element of the first level item

Skin parameters	CSS properties
generalFamilyFont	font-family
generalWeightFont	font-weight
generalSizeFont	font-size
generalTextColor	color
panelBorderColor	border-top-color

Table 6.278. Skin parameter redefinition for a disabled item

Parameter for disabled item	CSS properties
tabDisabledTextColor	color

6.65.8. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

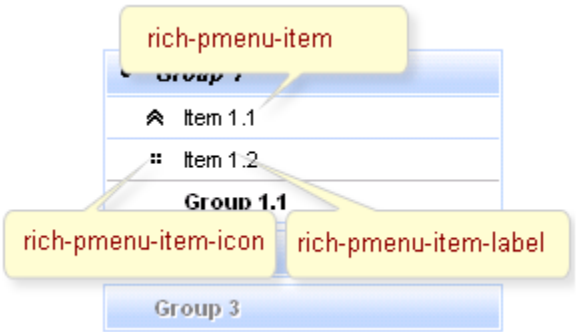


Figure 6.94. Classes names

Table 6.279. Classes names that define the first level items

Class name	Description
rich-pmenu-top-item	Defines styles for a top panel menu item
rich-pmenu-top-item-icon	Defines styles for a top panel menu item icon
rich-pmenu-top-item-label	Defines styles for a top panel menu item label

Table 6.280. Classes names that define the second and lower level items

Class name	Description
rich-pmenu-item	Defines styles for a panel menu item
rich-pmenu-item-icon	Definesstyles for a panel menu item icon
rich-pmenu-item-label	Defines styles for a panel menu item label

Table 6.281. Classes names that define items state

Class name	Description
rich-pmenu-item-selected	Defines styles for a panel menu selected item
rich-pmenu-disabled-element	Defines styles for a disabled panel menu item
rich-pmenu-hovered-element	Defines styles for a hovered panel menu item

In order to redefine styles for all **<rich:panelMenuItem>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:panelMenuItem>** components, define your own style classes in the corresponding **<rich:panelMenuItem>** attributes.

6.66. < rich:scrollableDataTable >

6.66.1. Description

The <rich:scrollableDataTable> component is used for the table-like component creation. The component just adds the set of additional features described below in comparison with the standard table.

Figure 6.95. ScrollableDataTable component

6.66.2. Key Features

- Highly customizable look and feel
- Variable content of the table cells
- Dynamically fetching the rows from the server when the table is scrolled up and down
- Resizing columns by mouse dragging the column bar
- Sorting column by clicking the header
- Fixed one or more left columns when table is scrolled horizontally
- One and multi-selection rows mode
- Built-it drag-n-drop support

Table 6.282. rich : scrollableDataTable attributes

Attribute Name	Description
activeClass	A CSS class to be applied to an active row
ajaxKeys	This attribute defines rows that are updated after an AJAX request
ajaxSingle	if "true", submits ONLY one field/link, instead of all form controls

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
bypassUpdates	If "true", after process validations phase it skips updates of model beans on a force render response. It can be used for validating components input
captionClass	Space-separated list of CSS style class(es) that are be applied to caption for this component
columnClasses	Comma-delimited list of CSS style classes that are be applied to the columns of this table. A space separated list of classes may also be specified for any individual column. If the number of elements in this list is less than the number of columns specified in the "columns" attribute, no "class" attribute is output for each column greater than the number of elements in the list. If the number of elements in the list is greater than the number of columns specified in the "columns" attribute, the elements at the position in the list after the value of the "columns" attribute are ignored
componentState	It defines EL-binding for a component state for saving or redefinition
data	Serialized (on default with JSON) data passed on the client by a developer on AJAX request. It's accessible via "data.foo" syntax
eventsQueue	Name of requests queue to avoid send next request before complete other from same event. Can be used to reduce number of requests of frequently events (key press, mouse move etc.)
first	A zero-relative row number of the first row to display
focus	id of element to set focus after request completed on client side
footerClass	Space-separated list of CSS style class(es) that are be applied to any footer generated for this table
frozenColCount	Defines the number of the fixed columns from the left side that will not be scrolled via horizontal scroll. Default value is '0'
headerClass	Space-separated list of CSS style class(es) that are be applied to any header generated for this table

Attribute Name	Description
height	Defines a height of the component. Default value is 500px
hideWhenScrolling	If 'true' data will be hidden during scrolling. Can be used for increase performance. Default value is 'false'
id	Every component may have a unique id that is automatically created if omitted
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response isn't actual now
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. If "false" (default) updates all rendered by ajax region components
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
oncomplete	JavaScript code for call after request completed on client side
onRowClick	HTML: a script expression; a pointer button is clicked on row
onRowDblClick	HTML: a script expression; a pointer button is double-clicked on row
onRowMouseDown	HTML: script expression; a pointer button is pressed down on row
onRowMouseUp	HTML: script expression; a pointer button is released on row
onselectionchange	HTML: script expression to invoke on changing of rows selection
rendered	If "false", this component is not rendered
requestDelay	Attribute defines the time (in ms.) that the request will be wait in the queue before it is ready to send. When the delay time is over, the request will be sent to the server or removed if the newest 'similar' request is in a queue already

Attribute Name	Description
reRender	Id['s] (in format of call UIComponent.findComponent()) of components, rendered in case of AjaxRequest caused by this component. Can be single id, comma-separated list of Id's, or EL Expression with array or Collection
rowClasses	A comma-delimited list of CSS style classes that is applied to popup table rows. A space separated list of classes may also be specified for any individual row. The styles are applied, in turn, to each row in the table. For example, if the list has two elements, the first style class in the list is applied to the first row, the second to the second row, the first to the third row, the second to the fourth row, etc. In other words, we keep iterating through the list until we reach the end, and then we start at the beginning again
rowKey	The attribute is a representation of an identifier for a specific data row
rowKeyVar	The attribute provides access to a row key in a Request scope
rows	A number of rows to display, or zero for all remaining rows in the table
scriptVar	Name of JavaScript variable corresponding to component
selectedClass	Name of the CSS class for a selected row
selection	Value binding representing selected rows
sortMode	Defines mode of sorting. Possible values are 'single' for sorting of one column and 'multi' for some.
sortOrder	ValueBinding pointing at a property of a class to manage rows sorting
stateVar	The attribute provides access to a component state on the client side
status	ID (in format of call UIComponent.findComponent()) of Request status component
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute

Attribute Name	Description
timeout	Response waiting time on a particular request. If a response is not received during this time, the request is aborted
value	The current value for this component
var	A request-scope attribute via which the data object for the current row will be used when iterating
width	Defines a width of the component. Default value is 700px

Table 6.283. Component identification parameters

Name	Value
component-type	org.richfaces.component.ScrollableDataTable
component-class	org.richfaces.component.html.HtmlScrollableDataTable
component-family	org.richfaces.component.ScrollableDataTable
renderer-type	org.richfaces.renderkit.html.ScrollableDataTableRenderer
tag-class	org.richfaces.taglib.ScrollableDataTableTag

6.66.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:scrollableDataTable value="#{dataTableScrollerBean.allCars}"
 var="category">
        <!-...//Set of columns and header/footer facets-->
    </rich:scrollableDataTable>
...
```

6.66.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlScrollableDataTable;
...
HtmlScrollableDataTable myScrollableDataTable = new HtmlScrollableDataTable();
...
```

6.66.5. Details of Usage

The component represents on a page as a scrollable table with some fixed (non-scrollable) rows (header, footer) and columns. Columns of the table are optionally resizable. Resizing is available using "drag and

drop" of the column vertical borders. There is possibility to expand or collapse the columns through JS API on the client side. User can define the number of the fixed columns from the left side using attribute *"frozenColCount"* that will not be scrolled via horizontal scroll.

There is possibility to increase component performance using attribute *"hideWhenScrolling"* . If attribute value is 'true' data will be hidden during scrolling.

It's possible to select the whole row with onclick on the row or some set of rows. Selection is optional and availability of such feature is defined on the component. There are two ways to select a few rows:

- Just clicking the columns one by one.
- Clicking some row with the SHIFT button hold. In this case all the rows starting from last selected up to clicked should be selected.

The columns provides the possibility of expanding/collapsing on the client side through the next JS API:

- Collapse(columnId) - Performs the collapse action for the column with the corresponding id

It's possible to sort the table content after clicks on the header. The feature is optional. Every column should be pointed to the comparator method that will be used for sorting the table. In case the <rich:scrollableDataTable> is already sorted by some column and the header of this column has been clicked again - the sorting will be reversed.

The typical variant of using:

```
...
<rich:scrollableDataTable value="#{modelBuilder.model}" var="issues"
   frozenColCount="1"
   first="0"
   rows="40"
   width="300px"
   height="396px">
 <rich:column width="100px">
  <f:facet name="header" >
   <h:outputText value="State"/>
  </f:facet>
  <h:outputText value="#{issues.cell1}"/>
  <f:facet name="footer">
   <h:outputText value="State"/>
  </f:facet>
 </rich:column>
 <!--...//Set of columns and header/footer facets-->
</rich:scrollableDataTable>
...
```

The *"selection"* attribute allows to get the row data when using one and multi-selection rows mode.

This attribute is a reference to object to the instace of org.richfaces.model.selection.Selection interface, containing current collection of objects selected by user.

In the following example when user submits the form current collection of objects selected by user is placed in the object's property. Then on complete action the **<rich:modalPanel>** with selected data will be shown.

Example:

```
...
  <h:form>
   <rich:spacer height="30" />
   <rich:scrollableDataTable rowKeyVar="rkv" frozenColCount="1" height="200px"
    width="300px" id="carList" rows="40" columnClasses="col"
    value="#{dataTableScrollerBean.allCars}" var="category" sortMode="single"
    selection="#{dataTableScrollerBean.selection}">
    <rich:column id="make">
     <f:facet name="header"><h:outputText styleClass="headerText" value="Make"
 /></f:facet>
     <h:outputText value="#{category.make}" />
    </rich:column>
    <rich:column id="model">
     <f:facet name="header"><h:outputText styleClass="headerText" value="Model"
 /></f:facet>
     <h:outputText value="#{category.model}" />
    </rich:column>
    <rich:column id="price">
     <f:facet name="header"><h:outputText styleClass="headerText" value="Price"
 /></f:facet>
     <h:outputText value="#{category.price}" />
    </rich:column>
    </rich:scrollableDataTable>
   <rich:spacer height="20px"/>
   <a4j:commandButton value="Show Current Selection" reRender="table"
    action="#{dataTableScrollerBean.takeSelection}"
    oncomplete="javascript:Richfaces.showModalPanel('panel');"/>
 </h:form>
 <rich:modalPanel id="panel" autosized="true">
    <f:facet name="header">
     <h:outputText value="Selected Rows"/>
    </f:facet>
    <f:facet name="controls">
     <span style="cursor:pointer"
 onclick="javascript:Richfaces.hideModalPanel('panel')">X</span>
    </f:facet>
   <rich:dataTable value="#{dataTableScrollerBean.selectedCars}" var="sel"
 id="table">
    <rich:column>
     <f:facet name="header"><h:outputText value="Make" /></f:facet>
     <h:outputText value="#{sel.make}" />
    </rich:column>
    <rich:column id="model">
     <f:facet name="header"><h:outputText value="Model" /></f:facet>
     <h:outputText value="#{sel.model}" />
    </rich:column>
    <rich:column id="price">
     <f:facet name="header"><h:outputText value="Price" /></f:facet>
     <h:outputText value="#{sel.price}" />
    </rich:column>
    </rich:dataTable>
 </rich:modalPanel>
...
```

This is a result:

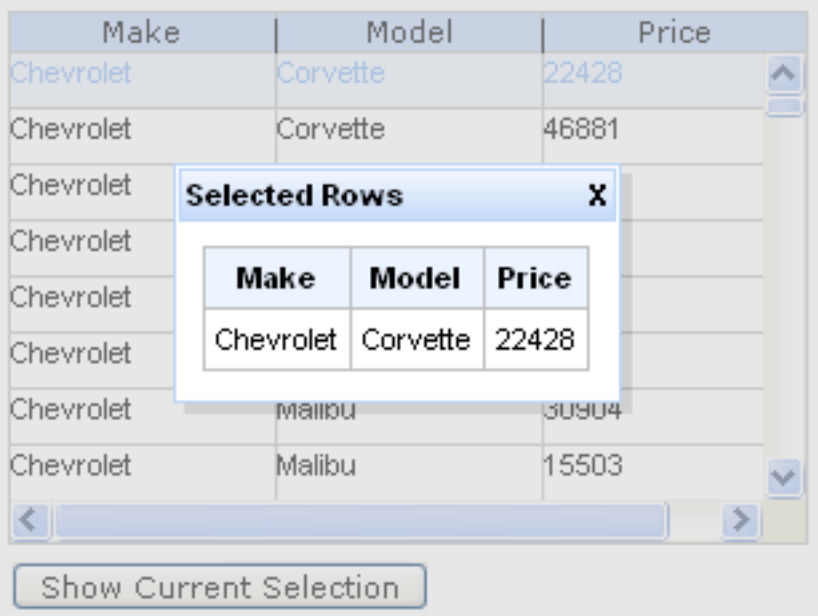


Figure 6.96. The *"selection"* attribute usage

The **<rich:scrollableDataTable>** component has the following extra attributes for event processing on the client:

- onselectionchange
- oncomplete
- onRowClick
- onRowDblClick
- onRowMouseUp
- onRowMouseDown

6.66.6. JavaScript API

Table 6.284. JavaScript API

Function	Description
Collapse(columnId)	Performs a collapse action for column with corresponding Id

6.66.7. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:scrollableDataTable>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:scrollableDataTable>** component

6.66.8. Skin Parameters Redefinition

Table 6.285. Skin parameters for all table

Skin parameters	CSS properties
tableBackgroundColor	background-color
tableBorderColor	border-color
tableBorderWidth	border-width

Table 6.286. Skin parameters for header rows and cells

Skin parameters	CSS properties
headerBackgroundColor	background-color
headerTextColor	color
generalFamilyFont	font-family
generalSizeFont	font-size
tableBorderWidth	border-bottom-width
tableBorderColor	border-bottom-color
tableBorderWidth	border-right-width
tableBorderColor	border-right-color

Table 6.287. Skin parameters for footer rows and cells

Skin parameters	CSS properties
tableSubfooterBackgroundColor	background-color
generalFamilyFont	font-family
generalSizeFont	font-size
tableBorderColor	border-right-color
generalFamilyFont	font-family
generalSizeFont	font-size

Table 6.288. Skin parameters for column cells

Skin parameters	CSS properties
tableBorderColor	border-right-color

Skin parameters	CSS properties
tableBorderColor	border-bottom-color

Table 6.289. Skin parameters for active rows

Skin parameters	CSS properties
tabDisabledTextColor	color

Table 6.290. Skin parameters for selected rows

Skin parameters	CSS properties
additionalBackgroundColor	background-color

6.66.9. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

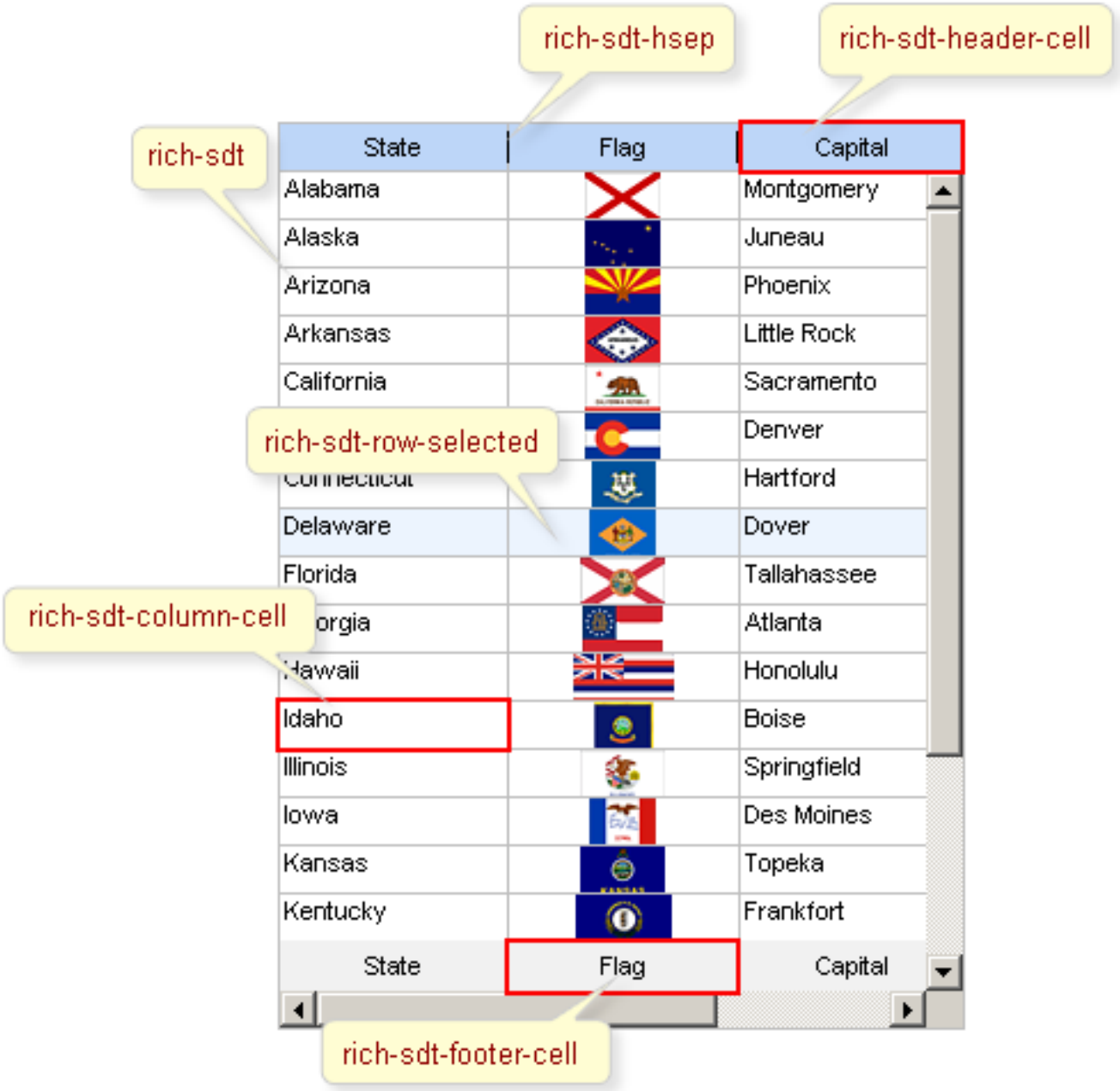


Figure 6.97. Classes names

Table 6.291. Classes names that define a component appearance

Class name	Description
rich-sdt	Defines styles for a component appearance

Table 6.292. Classes names that define footer and header elements

Class name	Description
rich-sdt-header-cell	Defines styles for header cells
rich-sdt-header-raw	Defines styles for a header raw

Class name	Description
rich-sdt-column-cell	Defines styles for column cells
rich-sdt-footer-cell	Defines styles for footer cells
rich-sdt-footer-raw	Defines styles for a footer raw
rich-sdt-hsep	Defines styles for header separators

Table 6.293. Classes names that define different states

Class name	Description
rich-sdt-row-active	Defines styles for an active row
rich-sdt-row-selected	Defines styles for a selected row
rich-sdt-column-sort-up	Defines styles for ascending sorted column
rich-sdt-column-sort-down	Defines styles for descending sorted column

In order to redefine styles for all **<rich:scrollableDataTable>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:scrollableDataTable>** components, define your own style classes in the corresponding **<rich:scrollableDataTable>** attributes.

6.66.10. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/scrollableDataTable.jsf?c=scrollableDataTable] you can see the example of **<rich:scrollableDataTable>** usage.

6.67. < rich:separator >

6.67.1. Description

A horizontal line to use as a separator in a layout. The line type can be customized with the *"lineType"* parameter.

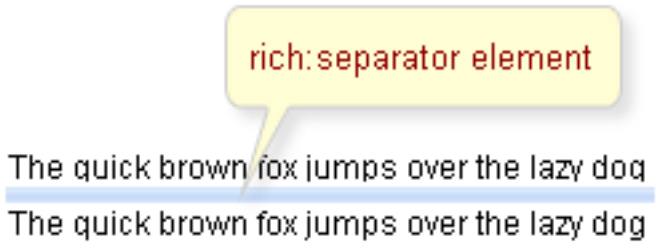


Figure 6.98. Separator component

6.67.2. Key Features

- Highly customizable look and feel
- Leveraging layout elements creation

Table 6.294. rich : separator attributes

Attribute Name	Description
align	left|center|right [CI] This attribute specifies a position of the separator according to the document. Permitted values: * left: The separator is to the left of the document. * center: The separator is to the center of the document. * right: The separator is to the right of the document
binding	The attribute takes a value-binding expression for a component property of a backing bean
height	The separator height. Default value is 6 pixels
id	Every component may have a unique id that is automatically created if omitted
lineType	A line type. The possible values are beveled (default), dotted, dashed, double and solid
onclick	HTML: a script expression; a pointer button is clicked
ondblclick	HTML: a script expression; a pointer button is double-clicked
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
rendered	If "false", this component is not rendered
style	CSS style(s) is/are to be applied when this component is rendered

Attribute Name	Description
styleClass	Corresponds to the HTML class attribute
title	HTML: An advisory title for this element. Often displayed as a tooltip
width	The separator width that can be defined in pixels or in percents. The default value is 100%

Table 6.295. Component identification parameters

Name	Value
component-type	org.richfaces.separator
component-class	org.richfaces.component.html.HtmlSeparator
component-family	org.richfaces.separator
renderer-type	org.richfaces.SeparatorRenderer
tag-class	org.richfaces.taglib.SeparatorTag

6.67.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:separator/>
...
```

6.67.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlSeparator;
...
HtmlSeparator mySeparator = new HtmlSeparator();
...
```

6.67.5. Details of Usage

<rich:separator> is a simple layout component which represents a separator stylized as a skin. Thus, the main attributes that define its style are *"style"* and *"styleClass"*. In addition there are *width* and *height* attributes that should be specified in pixels.

The line type can be customized with the *"lineType"* parameter. For example, different line types are shown after rendering with the following initial settings *lineType="double"* and *"lineType="solid"*.

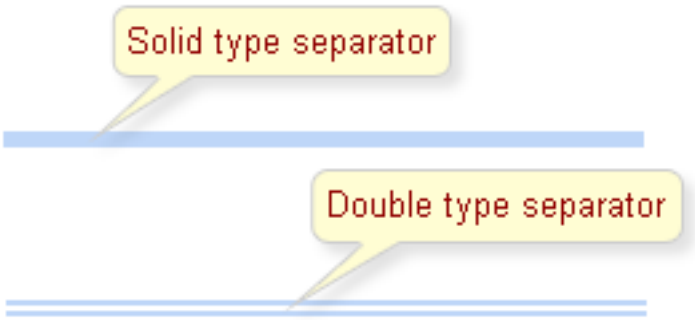


Figure 6.99. Different line types of separator

Except style attributes, there are also event definition attributes.

- onmouseover
- onclick
- onmouseout
- etc.

6.67.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.*

To redefine the appearance of all **<rich:separator>** components at once, you should add to your style sheets the *style class* used by a **<rich:separator>** component.

6.67.7. Definition of Custom Style Classes

Table 6.296. Classes names that define a component appearance

Class name	Description
rich-separator	Defines styles for a component appearance

In order to redefine styles for all **<rich:separator>** components on a page using CSS, it's enough to create a class with the same name and define necessary properties in it.

To change styles of particular **<rich:separator>** components, define your own style class in the corresponding **<rich:separator>** attributes.

6.67.8. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/separator.jsf?c=separator] you can see the example of **<rich:separator>** usage and sources for the given example.

6.68. < rich:simpleTogglePanel >

6.68.1. Description

A collapsible panel, which content shows/hides after activating a header control.

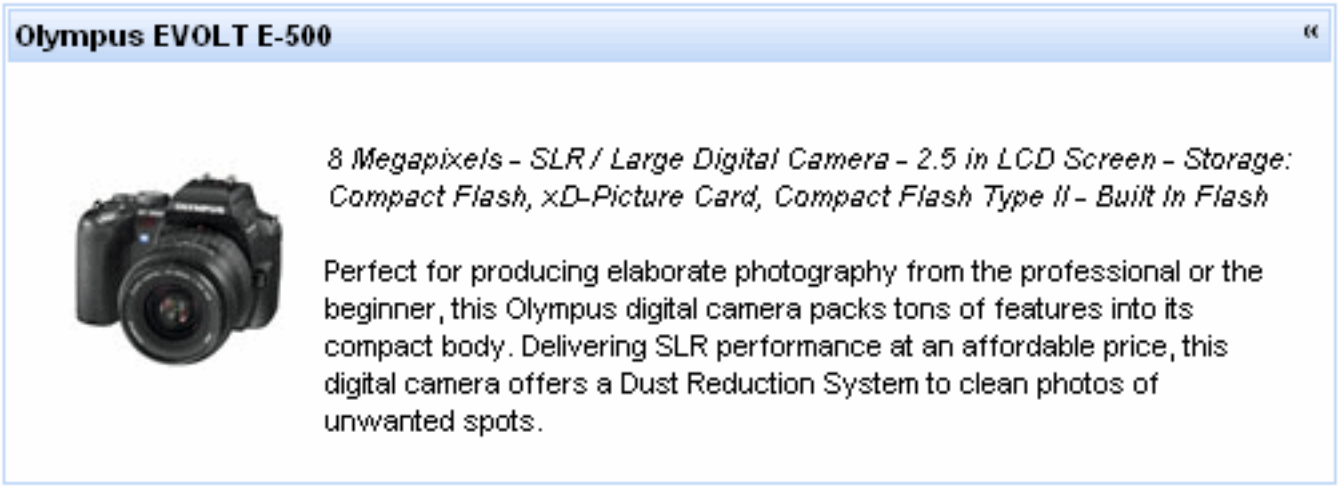


Figure 6.100. SimpleTogglePanel component

6.68.2. Key Features

- Highly customizable look and feel
- Support for any content inside
- Collapsing expanding content
- Three modes of collapsing/expanding
  - Server
  - Client
  - Ajax

Table 6.297. rich : simpleTogglePanel attributes

Attribute Name	Description
action	MethodBinding pointing at the application action to be invoked, if this UIComponent is activated by the user, during the Apply Request Values or Invoke Application phase of the request processing lifecycle, depending on the value of the immediate property
actionExpression	The action method binding expression
actionListener	MethodBinding pointing at method accepting an ActionEvent with return type void

Attribute Name	Description
ajaxSingle	if "true", submits ONLY one field/link, instead of all form controls
binding	The attribute takes a value-binding expression for a component property of a backing bean
bodyClass	A class that defines a style for a panel content
bypassUpdates	If "true", after process validations phase it skips updates of model beans on a force render response. It can be used for validating components input
data	Serialized (on default with JSON) data passed on the client by a developer on AJAX request. It's accessible via "data.foo" syntax
eventsQueue	Name of requests queue to avoid send next request before complete other from same event. Can be used to reduce number of requests of frequently events (key press, mouse move etc.)
focus	id of element to set focus after request completed on client side
headerClass	Class that defines the style for panel header
height	Height of a simple toggle panel content area might be defined as pixels or in percents. By default height is not defined
id	Every component may have a unique id that is automatically created if omitted
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response isn't actual now
immediate	True means, that the default ActionListener should be executed immediately (i.e. during Apply Request Values phase of the request processing lifecycle), rather than waiting until the Invoke Application phase
label	Marker to be rendered on a panel header
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. If "false" (default) updates all rendered by ajax region components

Attribute Name	Description
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
onclick	HTML: a script expression; a pointer button is clicked
oncomplete	JavaScript code for call after request completed on client side
ondblclick	HTML: a script expression; a pointer button is double-clicked
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
opened	A false value for this attribute makes a panel closed as default
rendered	If "false", this component is not rendered
requestDelay	Attribute defines the time (in ms.) that the request will be wait in the queue before it is ready to send. When the delay time is over, the request will be sent to the server or removed if the newest 'similar' request is in a queue already
reRender	Id['s] (in format of call UIComponent.findComponent()) of components, rendered in case of AjaxRequest caused by this component. Can be single id, comma-separated list of Id's, or EL Expression with array or Collection
status	ID (in format of call UIComponent.findComponent()) of Request status component
style	CSS style(s) is/are to be applied when this component is rendered

Attribute Name	Description
styleClass	Corresponds to the HTML class attribute
switchType	Facets switch algorithm: "client", "server"(default), "ajax"
timeout	Response waiting time on a particular request. If a response is not received during this time, the request is aborted
value	The current value for this component
width	Width of a simple toggle panel might be defined as pixels or in percents. By default width is not defined

Table 6.298. Component identification parameters

Name	Value
component-type	org.richfaces.SimpleTogglePanel
component-class	org.richfaces.component.html.HtmlSimpleTogglePanel
component-family	org.richfaces.SimpleTogglePanel
renderer-type	org.richfaces.SimpleTogglePanelRenderer
tag-class	org.richfaces.taglib.SimpleTogglePanelTag

6.68.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:simpleTogglePanel>
        ...
    </rich:simpleTogglePanel>
...
```

6.68.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlSimpleTogglePanel;
...
HtmlSimpleTogglePanel myPanel = new HtmlSimpleTogglePanel();
...
```

6.68.5. Details of Usage

The component is a simplified version of toggle panel that initially has a defined layout as a panel with a header playing a role of a mode switching control. On a component header element, it's possible to define a label using an attribute with the same name.

Switching mode could be defined with the *"switchType"* attribute with three possible parameters.

- Server (DEFAULT)
  The common submission is performed around simpleTogglePanel and a page is completely rendered on a called panel. Only one at a time panel is uploaded onto the client side.

- Ajax
  AJAX form submission is performed around the panel, content of the called panel is uploaded on Ajax request and additionally specified elements in the *"reRender"* attribute are rendered. Only one at a time panel is uploaded on the client side.

- Client
  All panels are uploaded on the client side. Switching from the active to the hidden panel is performed with client JavaScript.

The component could also have an *"expanded"* (true/false) attribute responsible for keeping a panel state. It gives an opportunity to manage a simpleTogglePanel state from a model.

- onmouseover

- onclick

- onmouseout

- etc.

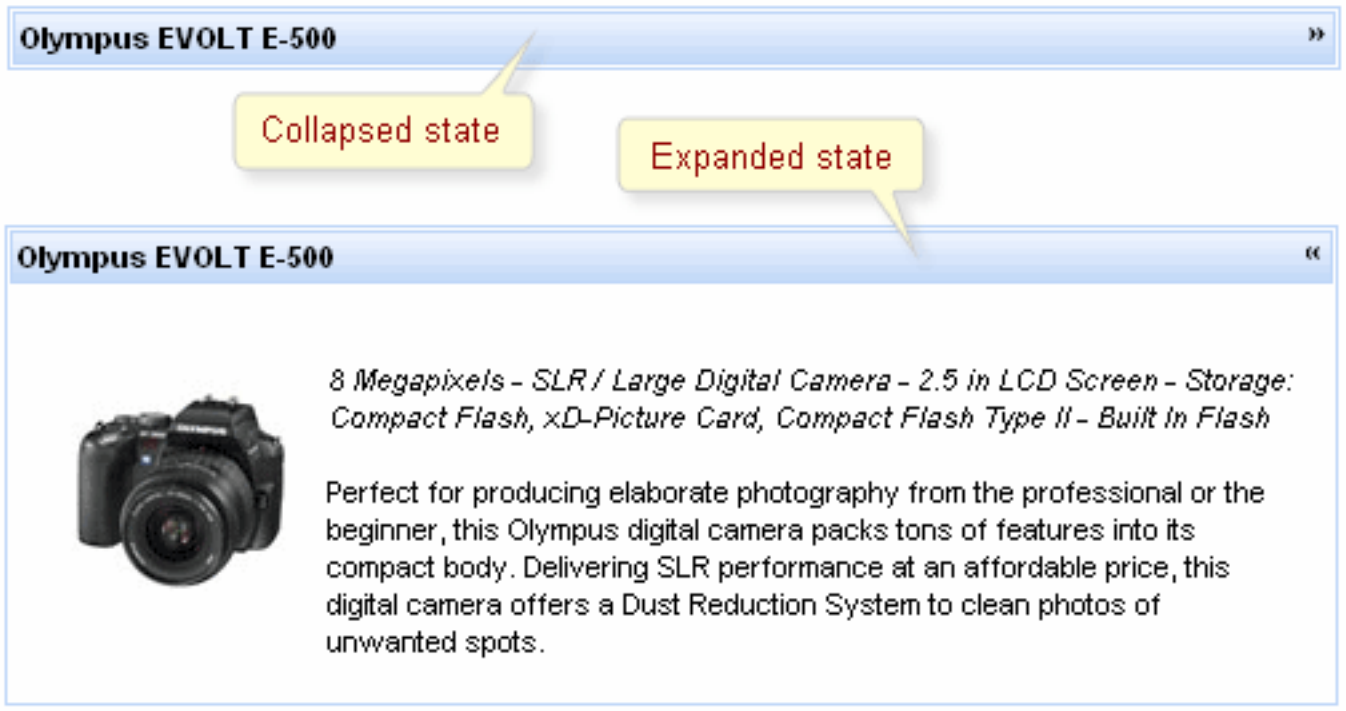


Figure 6.101. SimpleTogglePanel states

6.68.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:simpleTooglePanel>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:simpleTooglePanel>** component

6.68.7. Skin Parameters Redefinition

Table 6.299. Skin parameters for a whole component

Skin parameters	CSS properties
generalBackgroundColor	background-color
panelBorderColor	border-color

Table 6.300. Skin parameters for a header element

Skin parameters	CSS properties
headerBackgroundColor	background-color
headerBackgroundColor	border-color
headerSizeFont	font-size

Skin parameters	CSS properties
headTextColor	color
headerWeightFont	font-weight
headerFamilyFont	font-family

Table 6.301. Skin parameters for a body element

Skin parameters	CSS properties
generalBackgroundColor	background-color
generalSizeFont	font-size
panelTextColor	color
generalFamilyFont	font-family

6.68.8. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

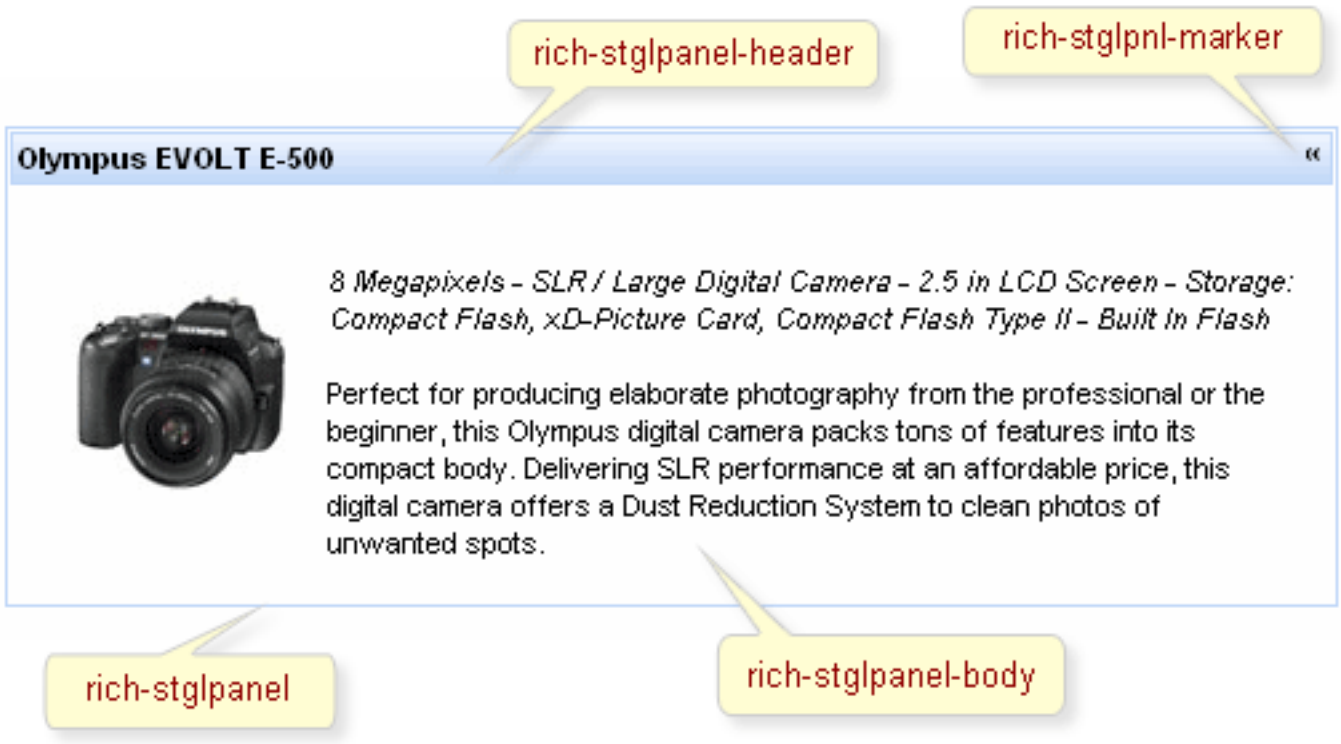


Figure 6.102. Style classes

Table 6.302. Classes names that define a component appearance

Class name	Class description
rich-stglpanel	Defines styles for a wrapper element of a component

Class name	Class description
rich-stglpanel-header	Defines styles for header element of a component
rich-stglpnl-marker	Defines styles for a wrapper element of a marker
rich-stglpanel-body	Defines styles for a component content

Table 6.303. Style component classes

Class name	Class description
styleClass	The class defines panel common style. It's used in the outside ** ** element
bodyClass	applicable to panels body elements
headerClass	applicable to header elements

In order to redefine styles for all **<rich:simpleTogglePanel>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:simpleTogglePanel>** components, define your own style classes in the corresponding **<rich:simpleTogglePanel>** attributes.

6.68.9. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/simpleTogglePanel.jsf?c=simpleTogglePanel] you can see the example of **<rich:simpleTogglePanel>s** usage and sources for the given example.

6.69. < rich:spacer >

6.69.1. Description

A spacer that is used in layout and rendered as a transparent image.

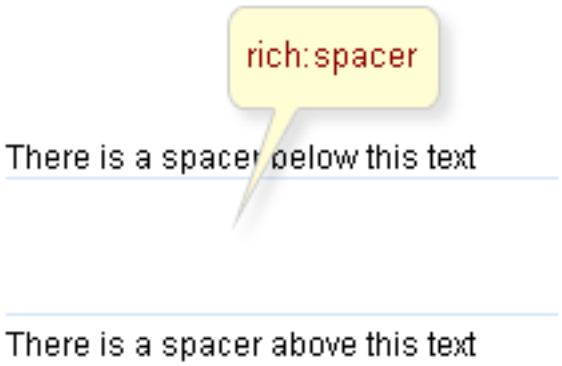


Figure 6.103. Spacer component

6.69.2. Key Features

- Easily used as a transparent layout spacer
- Horizontal or vertical spacing is managed by an attribute
- Easily customizable sizes parameters

Table 6.304. rich : spacer attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
height	The height of the spacer defined in pixels. The default value is 1 pixel
id	Every component may have a unique id that is automatically created if omitted
onclick	HTML: a script expression; a pointer button is clicked
ondblclick	HTML: a script expression; a pointer button is double-clicked
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
rendered	If "false", this component is not rendered
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
title	HTML: An advisory title for this element. Often used by the user agent as a tooltip
width	

Attribute Name	Description
	The width of the spacer defined in pixels. The default value is 1 pixel

Table 6.305. Component identification parameters

Name	Value
component-type	org.richfaces.spacer
component-class	org.richfaces.component.html.HtmlSpacer
component-family	org.richfaces.spacer
renderer-type	org.richfaces.SpacerRenderer
tag-class	org.richfaces.taglib.SpacerTag

6.69.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:spacer/>
...
```

6.69.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlSpacer;
...
HtmlSpacer mySpacer = new HtmlSpacer();
...
```

6.69.5. Details of Usage

<rich:spacer> is a simple layout component which represents a transparent spacer. Thus, the main attributes that define its style are *"style"* and *"styleClass"*.

In addition, the attributes are responsible for the component size: *"width"* and *"height"*.

Moreover, to add e.g. some JavaScript effects, events defined on it are used.

- onmouseover
- onclick
- onmouseout

- etc.

6.69.6. Look-and-Feel Customization

On the component generation, the framework presents a default rich-spacer class in *styleClass* of a generated component, i.e. in order to redefine appearance of all spacers at once, it's necessary to redefine this class in your own CSS (replacing in the result properties defined in a skin with your own).

To define appearance of the particular spacer, it's possible to write your own CSS classes and properties in the component style attributes (*"style"*, *"styleClass"*) modifying component property.

6.69.7. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/spacer.jsf?c=spacer] you can see the example of **<rich:spacer>** usage and sources for the given example.

6.70. < rich:suggestionbox >

6.70.1. Description

The component adds on-keypress suggestions capabilities to any input text component (like **<h:inputText>**). When a key is pressed in the field Ajax request is sent to the server. When the suggestion action returns a list of possible values, it pop ups them inside the ** ** element bellow the input.

Figure 6.104. SuggestionBox component

6.70.2. Key Features

- Fully skinnable component
- Adds *"onkeypress"* suggestions capabilities to any input text component
- Performs suggestion via Ajax requests without any line of JavaScript code written by you
- Possible to render table as a popup suggestion
- Can be pointed to any Ajax request status indicator of the page
- Easily customizable size of suggestion popup

- Setting rules that appear between cells within a table of popup values
- *"Event queue"* and *"request delay"* attributes present to divide frequently requests
- Managing area of components submitted on Ajax request
- Flexible list of components to update after Ajax request managed by attributes
- Setting restriction to Ajax request generation
- Easily setting action to collect suggestion data
- Keyboard navigation support

Table 6.306. rich : suggestionbox attributes

Attribute Name	Description
ajaxSingle	if "true", submit ONLY one field/link, instead of all form controls
bgcolor	Deprecated. This attribute sets the background color for the document body or table cells. This attribute sets the background color of the canvas for the document body (the BODY element) or for tables (the TABLE, TR, TH, and TD elements). Additional attributes for specifying text color can be used with the BODY element. This attribute has been deprecated in favor of style sheets for specifying background color information
binding	The attribute takes a value-binding expression for a component property of a backing bean
border	This attributes specifies the width (in pixels only) of the frame around a table
bypassUpdates	If "true", after process validations phase it skips updates of model beans on a force render response. It can be used for validating components input
cellpadding	This attribute specifies the amount of space between the border of the cell and its contents. If the value of this attribute is a pixel length, all four margins should be this distance from the contents. If the value of the attribute is percentage length, the top and bottom margins should be equally separated from the content based on percentage of the available vertical space, and the left and right margins should be equally separated from the content based on percentage of the available horizontal space

Attribute Name	Description
cellspacing	This attribute specifies how much space the user agent should leave between the table and the column on all four sides. The attribute also specifies the amount of space to leave between cells
converter	Id of Converter to be used or reference to a Converter
data	Serialized (on default with JSON) data passed on the client by a developer on AJAX request. It's accessible via "data.foo" syntax
dir	Direction indication for text that does not inherit directionality. Valid values are "LTR" (left-to-right) and "RTL" (right-to-left)
entryClass	Name of the CSS class for a suggestion entry element (table row)
eventsQueue	Name of requests queue to avoid send next request before complete other from same event. Can be used to reduce number of requests of frequently events (key press, mouse move etc.)
fetchValue	A value to set in the target input element on a choice suggestion that isn't shown in the suggestion table. It can be used for descriptive output comments or suggestions. If not set, all text in the suggestion row is set as a value
first	A zero-relative row number of the first row to display
focus	id of element to set focus after request completed on client side
for	id (or full path of id's) of target components, for which this element must provide support. If a target component inside of the same <code>NamingContainer</code> (UIForm, UIData in base implementations), can be simple value of the "id" attribute. For other cases must include id's of <code>NamingContainer</code> components, separated by ':'. For search from the root of components, must be started with ':'.
frame	void|above|below|hsides|lhs|rhs|vsides|box|border [CI] This attribute specifies which sides of the frame surrounding a table will be visible. Possible values: * void: No sides. This is the default value. * above: The

Attribute Name	Description
	top side only. * below: The bottom side only. * hsides: The top and bottom sides only. * vsides: The right and left sides only. * lhs: The left-hand side only. * rhs: The right-hand side only. * box: All four sides. * border: All four sides
frequency	Delay (in seconds) before activating the suggestion pop-up
height	Height of the pop-up window in pixels
id	Every component may have a unique id that is automatically created if omitted
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response isn't actual now
immediate	A flag indicating that this component value must be converted and validated immediately (that is, during Apply Request Values phase), rather than waiting until a Process Validations phase.
lang	Code describing the language used in the generated markup for this component
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. If "false" (default) updates all rendered by ajax region components
minChars	Minimal number of chars in input to activate suggestion pop-up
nothingLabel	"nothingLabel" is inserted to popup list if the autocomplete returns empty list. It isn't selectable and list is closed as always after click on it and nothing is put to input.
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
oncomplete	JavaScript code for call after request completed on client side
onselect	JavaScript code for call on select suggestion, after update value of target element

Attribute Name	Description
onsubmit	JavaScript code for call before submission of ajax event
param	Name the HTTP request parameter with the value of input element token. If not set, it be will sent as an input element name. In this case, input will perform validation and update the value
popupClass	HTML CSS class attribute of element for pop-up suggestion content
popupStyle	HTML CSS style attribute of element for pop-up suggestion content
rendered	If "false", this component is not rendered
requestDelay	Attribute defines the time (in ms.) that the request will be wait in the queue before it is ready to send. When the delay time is over, the request will be sent to the server or removed if the newest 'similar' request is in a queue already
reRender	Id['s] (in format of call UIComponent.findComponent()) of components, rendered in case of AjaxRequest caused by this component. Can be single id, comma-separated list of Id's, or EL Expression with array or Collection
rowClasses	A comma-delimited list of CSS style classes that is applied to popup table rows. A space separated list of classes may also be specified for any individual row. The styles are applied, in turn, to each row in the table. For example, if the list has two elements, the first style class in the list is applied to the first row, the second to the second row, the first to the third row, the second to the fourth row, etc. In other words, we keep iterating through the list until we reach the end, and then we start at the beginning again
rowNumber	rowNumber
rules	This attribute specifies which rules will appear between cells within a table. The rendering of rules is user agent dependent. Possible values: * none: No rules. This is the default value. * groups: Rules will appear between row groups (see THEAD, TFOOT, and TBODY) and column groups (see COLGROUP and COL) only. * rows: Rules will appear between rows

Attribute Name	Description
	only. * cols: Rules will appear between columns only. * all: Rules will appear between all rows and columns
selectedClass	Name of the CSS class for a selected suggestion entry element (table row)
selectValueClass	Name of the CSS class for a selected suggestion entry element (table cell)
selfRendered	If "true", forces active Ajax region render response directly from stored components tree, bypasses page processing. Can be used for increase performance. Also, must be set to 'true' inside iteration components, such as dataTable.
shadowDepth	Pop-up shadow depth for suggestion content
shadowOpacity	Attribute defines shadow opacity for suggestion content
status	ID (in format of call UIComponent.findComponent()) of Request status component
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
suggestionAction	Method calls an expression to get a collection of suggestion data on request. It must have one parameter with a type of Object with content of input component and must return any type allowed for <h:datatable>
summary	This attribute provides a summary of the table's purpose and structure for user agents rendering to non-visual media such as speech and Braille
timeout	Response waiting time on a particular request. If a response is not received during this time, the request is aborted
title	Advisory title information about markup elements generated for this component
tokens	The list (or single value) of symbols which can be used for division chosen of suggestion pop-up values in a target element. After input of a symbol from the list suggestion pop-up it is caused again
upValue	upValue

Attribute Name	Description
value	The initial value to set when rendered for the first time
var	A request-scope attribute via which the data object for the current row will be used when iterating
width	Width of the pop-up window in pixels
zindex	Attribute is similar to the standard HTML attribute and can specify window placement relative to the content

Table 6.307. Component identification parameters

Name	Value
component-type	org.richfaces.SuggestionBox
component-class	org.richfaces.component.html.HtmlSuggestionBox
component-family	org.richfaces.SuggestionBox
renderer-type	org.richfaces.SuggestionBoxRenderer
tag-class	org.richfaces.taglib.SuggestionBoxTag

6.70.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <h:inputText value="#{bean.property}" id="suggest"/>
    <rich:suggestionbox for="suggest" suggestionAction="#{bean.autocomplete}"
                        var="suggest">
        <h:column>
            <h:outputText value="#{suggest.text}"/>
        </h:column>
    </rich:suggestionbox>
...
```

Here is the *bean.autocomplete* method that returns the collection to pop up:

Example:

```
public List autocomplete(Object event) {
    String pref = event.toString();
    //collecting some data that begins with "pref" letters.
        ...
        return result;
    }
```

6.70.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlSuggestionBox;
...
HtmlSuggestionBox myList = new HtmlSuggestionBox();
...
```

6.70.5. Details of Usage

As it is shown in the example above, the main component attribute are:

- *"for"*

  The attribute where there is an input component which activation causes a suggestion activation

- *"suggestionAction"*

  is an accepting parameter of a SuggestionEvent type that returns as a result a collection for rendering in a tool tip window.

- *"var"*

  a collection name that provides access for inputting into a table in a popup

There are also two size attributes (*"width"* and *"height"*) that are obligatory for the suggestion component. The attributes have initial Defaults but should be specified manually in order to be changed.

The suggestionBox component, as it is shown on the screenshot, could get any collection for an output and outputs it in a tooltip window the same as a custom dataTable (in several columns)

```
...
    <rich:suggestionbox for="test"
                        suggestionAction="#{bean.autocomplete}" var="cit"
 fetchValue="#{cit.text}">
        <h:column>
            <h:outputText value="#{cit.label}"/>
        </h:column>
        <h:column>
            <h:outputText value="#{cit.text}"/>
        </h:column>
    </rich:suggestionbox>
...
```

It looks on a page in the following way:

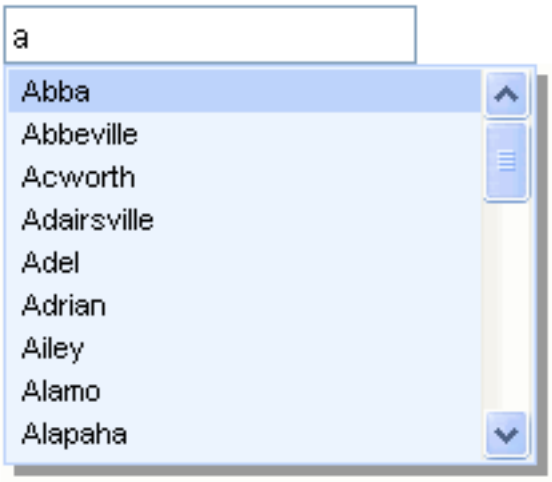


Figure 6.105. SuggestionBox with tooltip window

When some string is chosen input receives the corresponding value from the second column containing #{cit.text}

There is also one more important attribute named *"tokens"* that specifies separators after which a set of some characters sequence is defined as a new prefix beginning from this separator and not from the string beginning.

Example:

```
...
    <rich:suggestiobox for="test" suggestionAction="#{bean.autocomplete}" var="cit"
                       selfRendered="true" tokens=",">
        <h:column>
            <h:outputText value="#{cit.text}"/>
        </h:column>
    </rich:suggestionbox>
...
```

This example shows that when a city is chosen and a comma and first letter character are input, Ajax request is called again, but it submits a value starting from the last token:

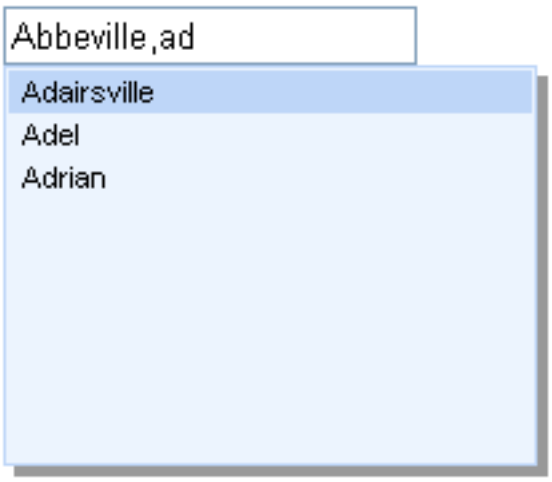


Figure 6.106. SuggestionBox with chosen word

For a multiple definition use either ",.; " syntax as a value for tokens or link a parameter to some bean property transmitting separators collection.

The component also encompasses *"layout"* and *"style"* attributes corresponding to dataTable ones for a table appearing in popup (for additional information, read JSF Reference) and custom attribute managing AJAX requests sending (for additional information, see Ajax4JSF Project [http://www.jboss.org/projects/jbossajax4jsf]).

In addition to these attributes common for Ajax action components and limiting requests quantity and frequency, suggestionBox has one more its own attribute limiting requests (the *"minChars"* attribute). The attribute defines characters quantity inputted into a field after which Ajax requests are called to perform suggestion.

There is possibility to define what be shown if the autocomplete returns empty list. Attribute *"nothingLabel"* or facet with the same name could be used for it.

Example:

```
...
    <rich:suggestiobox nothingLabel="Empty" for="test"
 suggestionAction="#{bean.autocomplete}" var="cit">
        <h:column>
            <h:outputText value="#{cit.text}"/>
        </h:column>
    </rich:suggestionbox>
...
```

Example:

```
...
<rich:suggestiobox for="test" suggestionAction="#{bean.autocomplete}" var="cit">
 <facet name="nothingLabel">
  <h:outputText value="Empty"/>
 </facet>
 <h:column>
  <h:outputText value="#{cit.text}"/>
 </h:column>
</rich:suggestionbox>
...
```

It looks on a page in the following way:

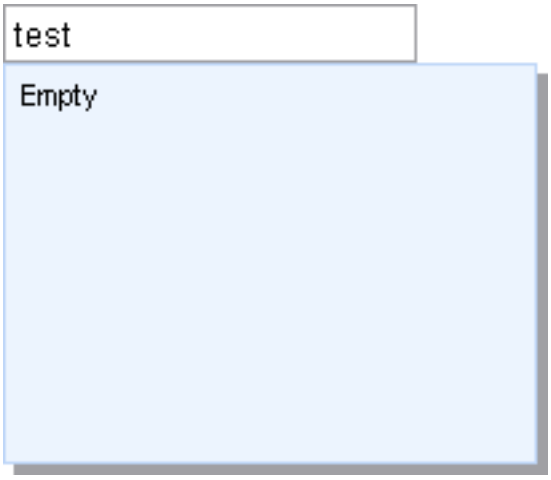


Figure 6.107. SuggestionBox with empty list

6.70.7. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:suggestionBox>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:suggestionBox>** component

6.70.8. Skin Parameters Redefinition

Table 6.308. General skin parameters redefinition for popup list

Parameters for popup list	CSS properties
additionalBackgroundColor	background-color
panelBorderColor	border-color

Table 6.309. Skin parameters redefinition for shadow element of the list

Parameters for shadow element of the list	CSS properties
shadowBackgroundColor	background-color
shadowBackgroundColor	border-color
shadowOpacity	opacity

Table 6.310. Skin parameters redefinition for popup table rows

Parameters for popup table rows	CSS properties
generalSizeFont	font-size

Parameters for popup table rows	CSS properties
generalTextColor	color
generalFamilyFont	font-family

Table 6.311. Skin parameters redefinition for selected row

Parameters for selected row	CSS properties
headerBackgroundColor	background-color
generalSizeFont	font-size
generalFamilyFont	font-family
headerTextColor	color

6.70.9. Definition of Custom Style Classes

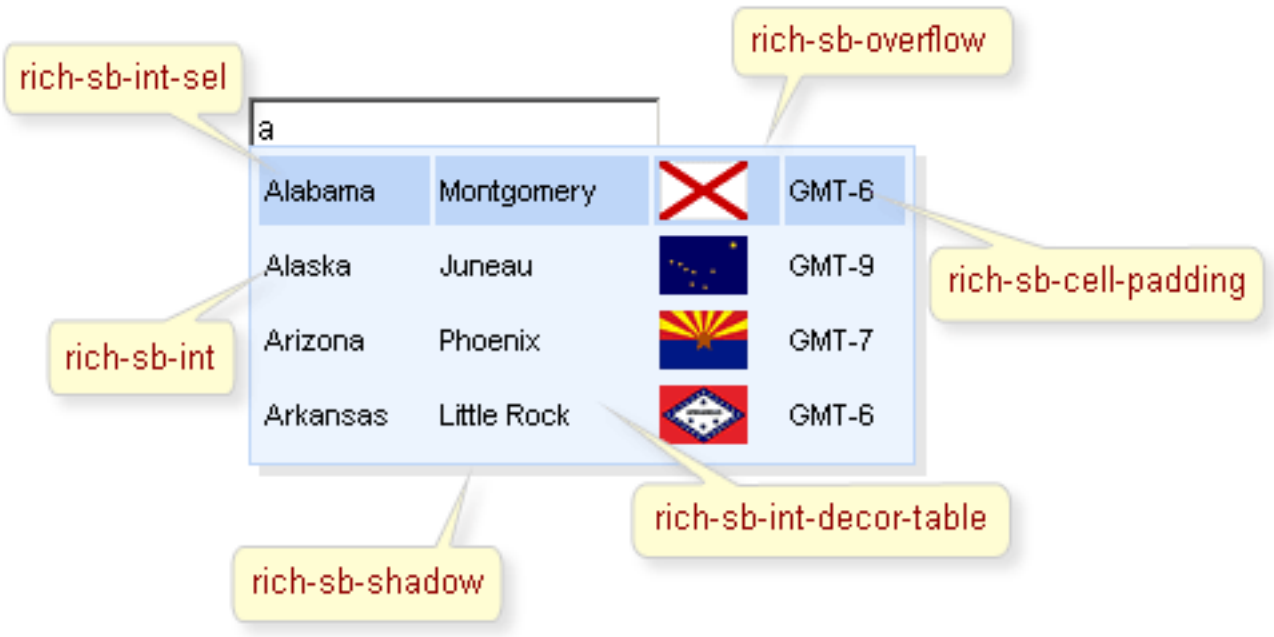


Figure 6.108. Classes names

On the screenshot, there are classes names defining specified elements.

Table 6.312. Classes names that define a suggestionBox

Class name	Description
rich-sb-common-container	Defines styles for a wrapper element of a suggestion container
rich-sb-ext-decor-1	Defines styles for the first wrapper element of a suggestion box exterior

Class name	Description
rich-sb-ext-decor-2	Defines styles for the second wrapper element of a suggestion box exterior
rich-sb-ext-decor-3	Defines styles for the third wrapper element of a suggestion box exterior
rich-sb-overflow	Defines styles for a wrapper element
rich-sb-int-decor-table	Defines styles for a suggestion box table
rich-sb-int	Defines the styles for a suggestion box table rows (tr)
rich-sb-cell-padding	Defines the styles for suggestion box table cells (td)
rich-sb-int-sel	Defines styles for a selected row
rich-sb-shadow	Defines styles for a suggestion boxshadow

In order to redefine styles for all **<rich:suggestionBox>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:suggestionBox>** components, define your own style classes in the corresponding **<rich:suggestionBox>** attributes.

6.70.10. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/suggestionBox.jsf?c=suggestionBox] you can see the example of **<rich:suggestionBox>** usage and sources for the given example.

6.71. < rich:tabPanel >

6.71.1. Description

A tab panel displaying tabs for grouping content of the panel.

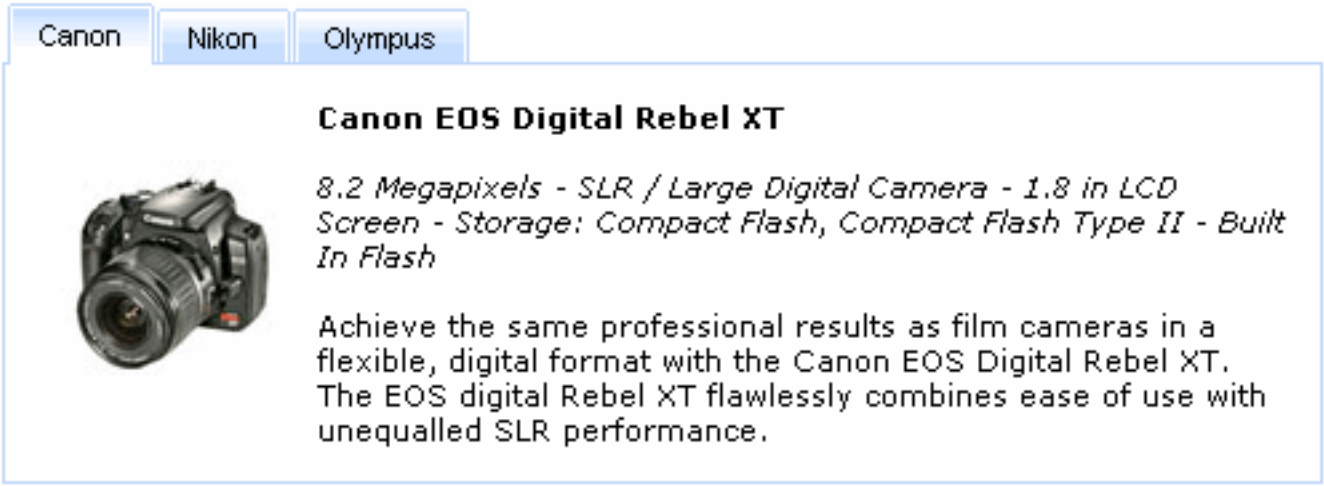


Figure 6.109. TabPanel component

6.71.2. Key Features

- Skinnable tab panel and child items
- Disabled/enabled tab options
- Customizable headers
- Group any content inside a tab
- Each tab has a unique name for direct access (e.g. for switching between tabs)
- Switch methods can be easily customized with attribute to:
  - Server
  - Client
  - AJAX
- Switch methods can be selected for the whole tab panel and for the each tab separately

Table 6.313. rich : tabPanel attributes

Attribute Name	Description
activeTabClass	A CSS class to be applied to an active tab
binding	The attribute takes a value-binding expression for a component property of a backing bean
contentClass	A CSS class for content of a tab panel
contentStyle	A CSS style is for the content of a tab panel
converter	Id of Converter to be used or reference to a Converter
converterMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the converter message, replacing any message that comes from the converter
dir	Direction indication for text that does not inherit directionality. Valid values are "LTR" (left-to-right) and "RTL" (right-to-left)
disabledTabClass	A CSS class to be applied to a disabled tab
headerAlignment	Sets tab headers alignment. It can be "left" or "right". "left" is used by default
headerClass	A CSS style is for the header of a tab panel.
headerSpacing	Sets tab headers spacing. It should be a valid size unit expression

Attribute Name	Description
height	Height of a tab panel defined in pixels or in percents
id	Every component may have a unique id that is automatically created if omitted
immediate	A flag indicating that this component value must be converted and validated immediately (that is, during Apply Request Values phase), rather than waiting until a Process Validations phase
inactiveTabClass	CSS class to be applied to an inactive (but not disabled) tab
lang	Code describing the language used in the generated markup for this component
onclick	HTML: a script expression; a pointer button is clicked
ondblclick	HTML: a script expression; a pointer button is double-clicked
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
rendered	If "false", this component is not rendered
required	If "true", this component is checked for non-empty input
requiredMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the validation message for the "required" facility, if the "required" facility is used
selectedTab	Attribute defines name of selected tab
style	CSS style(s) is/are to be applied when this component is rendered

Attribute Name	Description
styleClass	Corresponds to the HTML class attribute
switchType	Tab switch algorithm: "client", "server"(default), "ajax"
tabClass	A CSS class to be applied to all tabs
title	Advisory title information about markup elements generated for this component
validator	MethodBinding pointing at a method that is called during Process Validations phase of the request processing lifecycle, to validate the current value of this component
validatorMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the validator message, replacing any message that comes from the validator
value	The initial value to set when rendered for the first time
valueChangeListener	Listener for value changes
width	Width of a tab panel defined in pixels or in percents. The default value is 100%

Table 6.314. Component identification parameters

Name	Value
component-type	org.richfaces.TabPanel
component-class	org.richfaces.component.html.HtmlTabPanel
component-family	org.richfaces.TabPanel
renderer-type	org.richfaces.TabPanelRenderer
tag-class	org.richfaces.taglib.TabPanelTag

6.71.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:tabPanel>
        <!--//Set of Tabs inside-->
        <rich:tab>
            ...
        </rich:tab>
    </rich:tabPanel>
```

```
...
```

6.71.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlTabPanel;
...
HtmlTabPanel myTabPanel = new HtmlTabPanel();
...
```

6.71.5. Details of Usage

As it was mentioned above, TabPanel groups content on panels and performs switching from one to another. Hence, modes of switching between panels are described first of all.

> **Note:**
> All tabPanels should be wrapped into a form element so as content is correctly submitted inside. If a form is placed into each tab, the Action elements of Tab controls appear to be out of the form and content submission inside the panels could be performed only for Action components inside tabs.

Switching mode could be chosen with the tabPanel attribute *"mode"* with three possible parameters.

- Server (DEFAULT)
  The common submission is performed around tabPanel and a page is completely rendered on a called panel. Only one at a time tabPanel is uploaded onto the client side.
- Ajax
  AJAX form submission is performed around the tabPanel, content of the called tabPanel is uploaded on Ajax request and additionally specified elements in the *"reRender"* attribute are rendered. Only one at a time tabPanel is uploaded on the client.
- Client
  All tabPanels are uploaded on the client side. The switching from the active to the hidden panel is performed with client JavaScript.

As a result, the tabPanel is switched to the second tab according to the action returning outcome for moving onto another page and switching from the second to the first tab is performed.

There is also the *"selectedTab"* attribute. The attribute keeps an active tab name; therefore, an active tabPanel could be changed with setting a name of the necessary tab to this attribute.

There is also the *"headerAlignment"* attribute responsible for rendering of tabPanel components. The attribute has several values: left (Default), right, center, which specify Tabs components location on the top of the tabPanel.

Example:

```
...
    <rich:tabPanel width="40%" headerAlignment="right">
        <rich:tab label="Canon">
```

```
            ...
        </rich:tab>
        <rich:tab label="Nikon">
            ...
        </rich:tab>
        <rich:tab label="Olympus">
            ...
        </rich:tab>
    </rich:tabPanel>
...
```

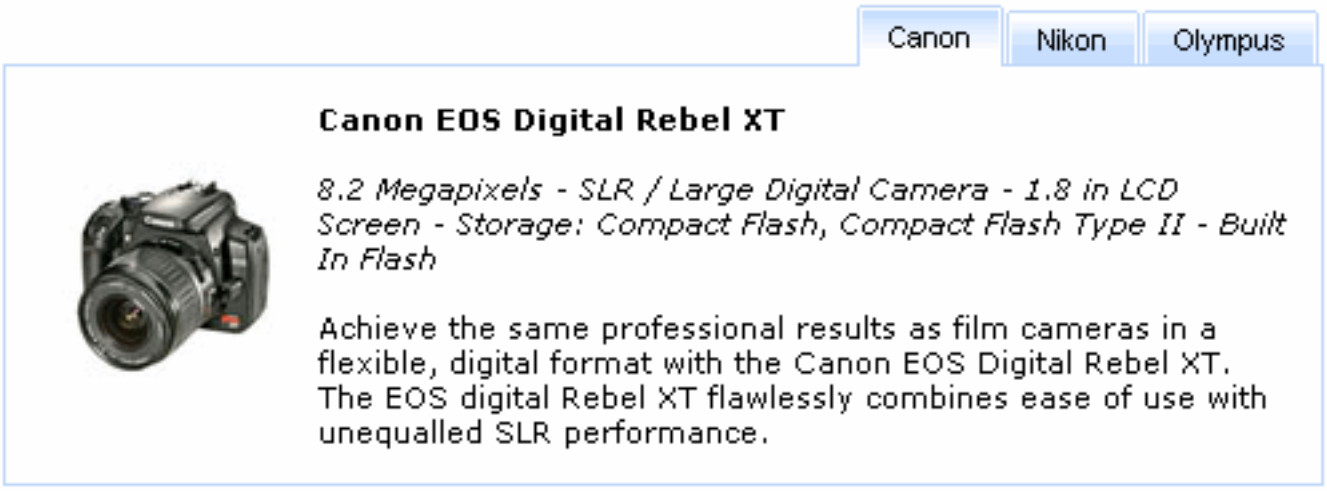


Figure 6.110. TabPanel with right aligned tabs

Except the specific attributes, the component has all necessary attributes for JavaScript events definition.

- onmouseover
- onmouseout
- etc.

6.71.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:tabPanel>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:tabPanel>** component

6.71.7. Skin Parameters Redefinition

Table 6.315. Skin parameters redefinition for a header

Skin parameters	CSS properties
panelBorderColor	border-top-color

Table 6.316. Skin parameters redefinition for an internal contant

Skin parameters	CSS properties
generalBackgroundColor	background-color
generalTextColor	color
panelBorderColor	border-bottom-color
panelBorderColor	border-right-color
panelBorderColor	border-left-color
generalSizeFont	font-size
generalFamilyFont	font-family

6.71.8. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

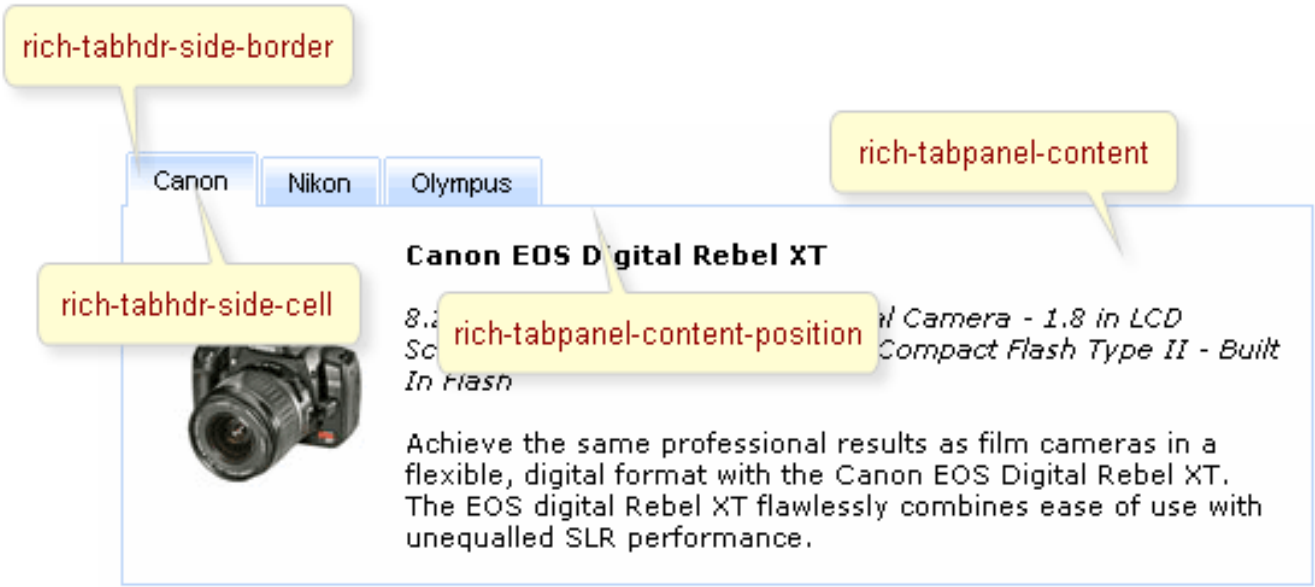


Figure 6.111. Style classes

Table 6.317. Classes names that define a component appearance

Class name	Description
rich-tabpanel	Defines styles for all tabpanel
rich-tabpanel-content	Defines styles for an internal content
rich-tabpanel-content-position	Defines styles for a wrapper element of a tabpanel content. It should define a shift equal to borders width in order to overlap panel tabs

Class name	Description
rich-tabhdr-side-border	Defines styles for side elements of a tabpanel header
rich-tabhdr-side-cell	Defines styles for a header internal element

Table 6.318. Classes names that define different tab header states (corresponds to rich-tabhdr-side-cell)

Class name	Description
rich-tabhdr-cell-active	Defines styles for an internal element of an active header
rich-tabhdr-cell-inactive	Defines styles for an internal element of an inactive label
rich-tabhdr-cell-disabled	Defines styles for an internal element of a disabled label

In order to redefine styles for all **<rich:tabPanel>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:tabPanel>** components, define your own style classes in the corresponding **<rich:tabPanel>** attributes.

6.71.9. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/tabPanel.jsf?c=tabPanel] you can see the example of **<rich:tabPanel>** usage and sources for the given example.

6.72. < rich:tab >

6.72.1. Description

A tab section within a tab panel.

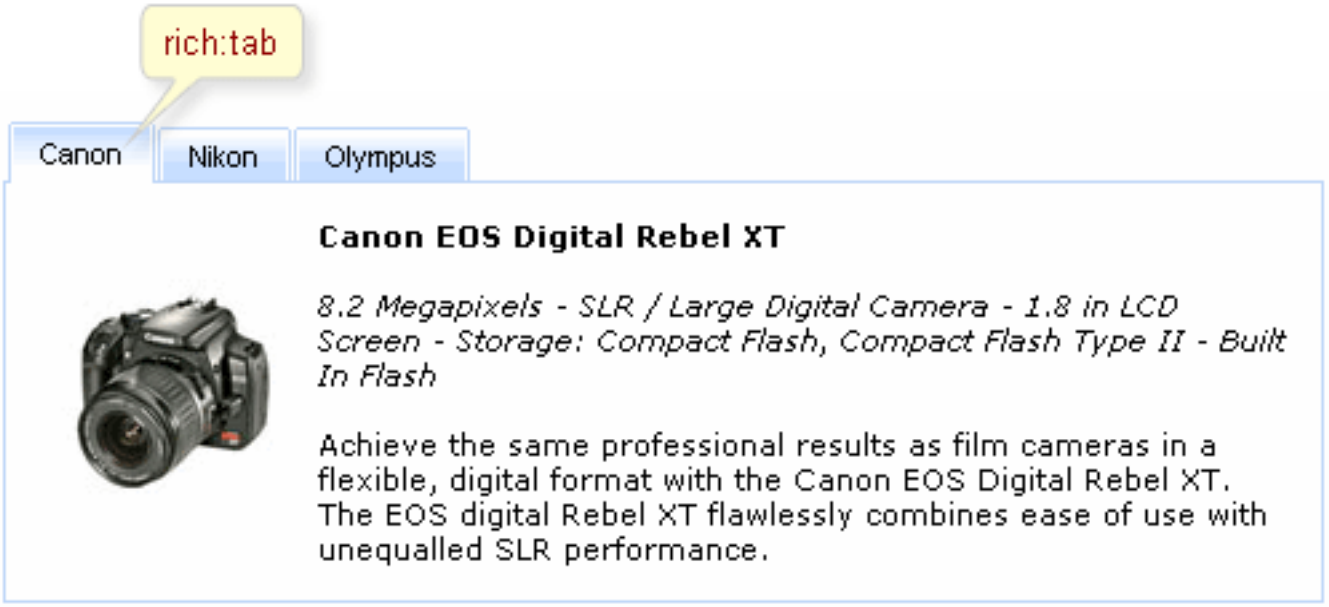


Figure 6.112. Tab component

6.72.2. Key Features

- Fully skinnable tabs content
- Disabled/enabled tab options
- Groups any content inside a tab
- Each tab has a unique name for a direct access (e.g. for switching between tabs)
- Switch methods can be easily customized for every tab separately with attribute to:
  - Server
  - Client
  - AJAX

Table 6.319. rich : tab attributes

Attribute Name	Description
action	MethodBinding pointing at the application action to be invoked, if this UIComponent is activated by the user, during the Apply Request Values or Invoke Application phase of the request processing lifecycle, depending on the value of the immediate property
actionExpression	The action method binding expression
actionListener	MethodBinding pointing at method accepting an ActionEvent with return type void

Attribute Name	Description
ajaxSingle	if "true", submits ONLY one field/link, instead of all form controls
binding	The attribute takes a value-binding expression for a component property of a backing bean
bypassUpdates	If "true", after process validations phase it skips updates of model beans on a force render response. It can be used for validating components input
data	Serialized (on default with JSON) data passed on the client by a developer on AJAX request. It's accessible via "data.foo" syntax
disabled	Disables a tab in a tab panel
eventsQueue	Name of requests queue to avoid send next request before complete other from same event. Can be used to reduce number of requests of frequently events (key press, mouse move etc.)
focus	id of element to set focus after request completed on client side
id	Every component may have a unique id that is automatically created if omitted
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response isn't actual now
immediate	True means, that the default ActionListener should be executed immediately (i.e. during Apply Request Values phase of the request processing lifecycle), rather than waiting until the Invoke Application phase
label	Text for the actual "tab" in a tab section
labelWidth	Length for the actual "tab" in a tab section defined in pixels. If it is not defined, the length is calculated basing on a tab label text length
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. If "false" (default) updates all rendered by ajax region components
name	Attribute defines tab name

Attribute Name	Description
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
onclick	HTML: a script expression; a pointer button is clicked
oncomplete	JavaScript code for call after request completed on client side
ondblclick	HTML: a script expression; a pointer button is double-clicked
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
ontabenter	Event must occurs on the tab which has been entered
ontableave	Event must occurs on the tab which has been left
rendered	If "false", this component is not rendered
requestDelay	Attribute defines the time (in ms.) that the request will be wait in the queue before it is ready to send. When the delay time is over, the request will be sent to the server or removed if the newest 'similar' request is in a queue already
reRender	Id['s] (in format of call UIComponent.findComponent()) of components, rendered in case of AjaxRequest caused by this component. Can be single id, comma-separated list of Id's, or EL Expression with array or Collection
status	ID (in format of call UIComponent.findComponent()) of Request status component
style	CSS style(s) is/are to be applied when this component is rendered

Attribute Name	Description
styleClass	Corresponds to the HTML class attribute
switchType	Tab switch algorithm: "client", "server", "ajax", "page"
timeout	Response waiting time on a particular request. If a response is not received during this time, the request is aborted
title	HTML: An advisory title for this element. Often displayed as a tooltip

Table 6.320. Component identification parameters

Name	Value
component-type	org.richfaces.Tab
component-class	org.richfaces.component.html.HtmlTab
component-family	org.richfaces.Tab
renderer-type	org.richfaces.TabRenderer
tag-class	org.richfaces.taglib.TabTag

6.72.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:tabPanel>
        <!--Set of Tabs inside-->
            <rich:tab>
                ...
            </rich:tab>
    </rich:tabPanel>
...
```

6.72.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlTab;
...
HtmlTab myTab = new HtmlTab();
...
```

6.72.5. Details of Usage

The main component function is to define a content group that is rendered and processed when the tab is active, i.e. click on a tab causes switching onto a tab containing content corresponded to this tab.

The *"label"* attribute defines text to be represented. If you can use the *"label"* facet, you can even not use the *"label"* attribute.
Example:

```
...
    <rich:tab>
        <f:facet name="label">
            <h:graphicImage value="/images/img1.gif"/>
        </f:facet>
        ...
        <!--Any Content inside-->
        ...
    </rich:tab>
...
```

A marker on a tab header defined with the *"label"* attribute. Moreover, each tab could be disabled (switching on this tab is impossible) with the *"disable"* attribute.

Example:

```
...
    <rich:tabPanel width="20%">
        <rich:tab label="Tab">
            <h:outputText value="Active Tab content"/>
        </rich:tab>
        <rich:tab label="Disabled Tab" disabled="true">
            ...
        </rich:tab>
        <rich:tab label="Next Enabled Tab">
            ...
        </rich:tab>
    </rich:tabPanel>
...
```

With this example it's possible to generate the tab panel with the second disabled and two active tabs (see the picture).

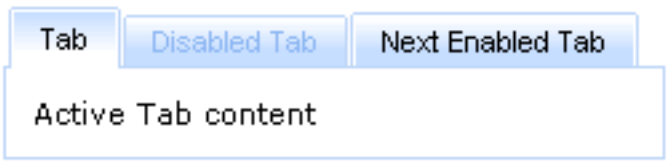


Figure 6.113. Tab Panel with disabled tab

Switching mode could be defined not only for the whole panel tab, but also for each particular tab, i.e. switching onto one tab could be performed right on the client with the corresponding JavaScript and onto another tab with an Ajax request on the server. Tab switching modes are the same as tabPanel ones.

Each tab also has an attribute name (alias for *"id"* attribute). Using this attribute value it's possible e.g. to set an active tab on a model level specifying this name in the corresponding attribute of the whole tab.

Except the specific component attributes it has all necessary attributes for JavaScript event definition.

- onmouseover
- onmouseout
- etc.

Some event could be performed on the tab which has been entered/left using "ontabenter"/"ontableave" attributes. See the example below.

Example:

```
...
    <rich:tabPanel>
        <rich:tab label="Tab1" ontabenter="alert()">
            ...
        </rich:tab>
        ...
    </rich:tabPanel>
...
```

The following example shows how on the client side to get the names of entered/left tabs.

```
ontabenter="alert(leftTabName)"
```

6.72.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

Note:

A panel appearance and content is defined with a tab panel i.e. on the tab level it's possible to define only an appearance of this tab header.

There are two ways to redefine the appearance of all **<rich:tab>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:tab>** component

6.72.7. Skin Parameters Redefinition

Table 6.321. Skin parameters redefinition for a tab header

Skin parameters	CSS properties
generalTextColor	color

Skin parameters	CSS properties
generalSizeFont	font-size
generalFamilyFont	font-family

Table 6.322. Skin parameters redefinition for an active tab

Skin parameters	CSS properties
generalTextColor	color
subBorderColor	border-color
generalBackgroundColor	background-color

Table 6.323. Skin parameters redefinition for an inactive tab

Skin parameters	CSS properties
tabBackgroundColor	background-color
subBorderColor	border-color

Table 6.324. Skin parameters redefinition for a disabled tab

Skin parameters	CSS properties
tabBackgroundColor	background-color
subBorderColor	border-color
tabDisabledTextColor	color

6.72.8. Definition of Custom Style Classes

Figure 6.114. Classes names

Table 6.325. Classes names that define a tab

Class name	Description
rich-tab-header	Defines styles for a tab header

Class name	Description
rich-tab-lable	Defines styles for a tab lable

Table 6.326. Classes names that define a tab states

Class name	Description
rich-tab-active	Defines styles for an active tab
rich-tab-inactive	Defines styles for an inactive tab
rich-tab-disabled	Defines styles for a disabled tab

In order to redefine styles for all **<rich:tab>** components on a page using CSS, it's enough to create classes with the same names and define necessary properties in them.

To change styles of particular **<rich:tab>** components define your own style classes in the corresponding **<rich:tab>** attribute.

6.73. < rich:togglePanel >

6.73.1. Description

A wrapper component with named facets, where every facet is shown after activation of the corresponding toggleControl (the other is hidden).

Figure 6.115. TogglePanel component

6.73.2. Key Features

- Support for any content inside
- Three modes of facets switching
  - Server
  - Client
  - Ajax
- Controls for togglePanel can be everywhere in layout

Table 6.327. rich : togglePanel attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
converter	Id of Converter to be used or reference to a Converter
converterMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the converter message, replacing any message that comes from the converter
id	Every component may have a unique id that is automatically created if omitted
immediate	A flag indicating that this component value must be converted and validated immediately (that is, during Apply Request Values phase), rather than waiting until a Process Validations phase
initialState	It contains a name of the first active facet
onclick	HTML: a script expression; a pointer button is clicked
ondblclick	HTML: a script expression; a pointer button is double-clicked
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away

Attribute Name	Description
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
rendered	If "false", this component is not rendered
required	If "true", this component is checked for non-empty input
requiredMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the validation message for the "required" facility, if the "required" facility is used
stateOrder	Names of the facets in the switching order. If ToggleControl doesn't contain information about a next facet to be shown it is switched corresponding to this attribute
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
switchType	Facets switch algorithm: "client", "server"(default), "ajax".
validator	MethodBinding pointing at a method that is called during Process Validations phase of the request processing lifecycle, to validate the current value of this component
validatorMessage	A ValueExpression enabled attribute that, if present, will be used as the text of the validator message, replacing any message that comes from the validator
value	The initial value to set when rendered for the first time
valueChangeListener	Listener for value changes

Table 6.328. Component identification parameters

Name	Value
component-type	org.richfaces.TogglePanel
component-class	org.richfaces.component.html.HtmlTogglePanel
component-family	org.richfaces.TogglePanel
renderer-type	org.richfaces.TogglePanelRenderer
tag-class	org.richfaces.taglib.TogglePanelTag

6.73.3. Creating the Component with a Page Tag

Here is a simple example as it could be used in a page:

Example:

```
...
    <rich:togglePanel>
        <f:facet name="first">
            ...
        </f:facet>
        <f:facet name="second">
            ...
        </f:facet>
            ...
    </rich:togglePanel>
    ...
    <!--//Set of the toggleControls somewhere on a page.-->
...
```

6.73.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlTogglePanel;
...
HtmlTogglePanel myPanel = new HtmlTogglePanel();
...
```

6.73.5. Details of Usage

As it was mentioned above, togglePanel splits content into named facets that become rendered and processed when a click performed on controls linked to this togglePanel (either switched on the client or send requests on the server for switching).

The initial component state is defined with *"initialState"* attribute, where a facet name that is shown at first is defined.

> **Note:**
> It's also possible to define an "empty" facet to implement the functionality as drop-down panels have and make the facet active when no content is required to be rendered.

Switching mode could be defined with the *"switchType"* attribute with three possible parameters:

- Server (DEFAULT)
  The common submission is performed around togglePanel and a page is completely rendered on a called panel. Only one at a time the panel is uploaded onto the client side.
- Ajax
  AJAX form submission is performed around the panel, content of the called panel is uploaded on an Ajax request and additionally specified elements in the *"reRender"* attribute are rendered. Only one at a time the panel is uploaded on the client side.

- Client
  All panels are uploaded on the client side. The switching from the active to the hidden panel is performed with client JavaScript.

"Facets" switching order could be defined on the side of **<rich:toggleControl>** component or on the panel. On the side of the togglePanel it's possible to define facets switching order with the *"stateOrder"* attribute. The facets names are enumerated in such an order that they are rendered when a control is clicked, as it's not defined where to switch beforehand.

Example:

```
...
    <rich:togglePanel id="panel" initialState="panelB" switchType="client"
                      stateOrder="panelA,panelB,panelC">
        <f:facet name="panelA">
            ...
        </f:facet>
        <f:facet name="panelB">
            ...
        </f:facet>
        <f:facet name="panelC">
            ...
        </f:facet>
    </rich:togglePanel>
    <rich:toggleControl for="panel" value="Switch"/>
...
```

The example shows a togglePanel initial state when the second facet (panelB) is rendered and successive switching from the first to the second happens.

6.73.6. Look-and-Feel Customization

The component doesn't have its own representation rendering only content of its facets, thus all look and feel is set only for content.

6.73.7. Definition of Custom Style Classes

Table 6.329. Classes names that define a component appearance

Class name	Description
rich-toggle-panel	Defines styles for all component
rich-tglctrl	Defines styles for a toggle control

6.73.8. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/togglePanel.jsf?c=togglePanel] you can see the example of **<rich:togglePanel>** usage and sources for the given example.

6.74. < rich:toggleControl >

6.74.1. Description

A link type control for switching between togglePanel facets. Target Panel is specified with *"for"* attribute. It can be located inside or outside the togglePanel. As the result of switching between facets previous facet is hidden and another one (specified with *"switchToState"* or panel *"stateOrder"* attributes) is shown.

Figure 6.116. ToggleControl component

6.74.2. Key Features

- Highly customizable look and feel
- Can be located anywhere in a page layout
- Switching is provided in the three modes
  - Server
  - Client
  - Ajax

Table 6.330. rich : toggleControl attributes

Attribute Name	Description
accesskey	Access key that, when pressed, transfers focus to this element
action	

Attribute Name	Description
	MethodBinding pointing at the application action to be invoked, if this UIComponent is activated by the user, during the Apply Request Values or Invoke Application phase of the request processing lifecycle, depending on the value of the immediate property
actionExpression	The action method binding expression
actionListener	MethodBinding pointing at method accepting an ActionEvent with return type void
ajaxSingle	if "true", submit ONLY one field/link, instead of all form controls
binding	The attribute takes a value-binding expression for a component property of a backing bean
bypassUpdates	If "true", after process validations phase skip updates of model beans an force render response. Can be used for validate components input
data	Serialized (on default with JSON) data passed on the client by a developer on AJAX request. It's accessible via "data.foo" syntax
dir	Direction indication for text that does not inherit directionality. Valid values are "LTR" (left-to-right) and "RTL" (right-to-left)
eventsQueue	Name of requests queue to avoid send next request before complete other from same event. Can be used to reduce number of requests of frequently events (key press, mouse move, etc.)
focus	id of element to set focus after request completed on client side
for	String containing comma separated ids (in the format of a UIComponent.findComponent() call) of the target components.
id	Every component may have a unique id that is automatically created if omitted
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just

Attribute Name	Description
	allows to avoid unnecessary updates on the client side if the response isn't actual now
immediate	True means, that the default ActionListener should be executed immediately (i.e. during Apply Request Values phase of the request processing lifecycle), rather than waiting until the Invoke Application phase
lang	Code describing the language used in the generated markup for this component
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. if "false" (default) updates all rendered by ajax region components
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
onblur	JavaScript code executed when this element loses focus
onclick	JavaScript code executed when a pointer button is clicked over this element
oncomplete	JavaScript code for call after request completed on client side
ondblclick	JavaScript code executed when a pointer button is double clicked over this element
onfocus	JavaScript code executed when this element receives focus
onkeydown	JavaScript code executed when a key is pressed down over this element
onkeypress	JavaScript code executed when a key is pressed and released over this element
onkeyup	JavaScript code executed when a key is released over this element
onmousedown	JavaScript code executed when a pointer button is pressed down over this element
onmousemove	JavaScript code executed when a pointer button is moved within this element
onmouseout	JavaScript code executed when a pointer button is moved away from this element

Attribute Name	Description
onmouseover	JavaScript code executed when a pointer button is moved onto this element
onmouseup	JavaScript code executed when a pointer button is released over this element
panelId	Attribute defines Id for corresponding panel
rendered	If "false", this component is not rendered
requestDelay	Attribute defines the time (in ms.) that the request will be wait in the queue before it is ready to send. When the delay time is over, the request will be sent to the server or removed if the newest 'similar' request is in a queue already
status	ID (in format of call UIComponent.findComponent()) of Request status component
style	CSS style(s) to be applied when this component is rendered
styleClass	Space-separated list of CSS style class(es) to be applied when this element is rendered. This value must be passed through as the "class" attribute on generated markup
switchToState	Contains one of the facets names where target togglePanel is switched to
tabindex	Position of this element in the tabbing order for the current document. This value must be an integer between 0 and 32767
timeout	Response waiting time on a particular request. If a response is not received during this time, the request is aborted
title	Advisory title information about markup elements generated for this component
value	Initial value to set when rendered for the first time

Table 6.331. Component identification parameters

Name	Value
component-type	org.richfaces.ToggleControl
component-class	org.richfaces.component.html.HtmlToggleControl

Name	Value
component-family	org.richfaces.ToggleControl
renderer-type	org.richfaces.ToggleControlRenderer
tag-class	org.richfaces.taglib.ToggleControlTag

6.74.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:toggleControl for="panel"/>
        ...
        <rich:togglePanel id="panel" stateOrder="[facets order to be switched]">
            <!--//Set of Facets-->
        </rich:togglePanel>
...
```

6.74.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlToggleControl;
...
HtmlToggleControl myControl = new HtmlToggleControl();
...
```

6.74.5. Details of Usage

As it was mentioned above, the control could be in any place in layout and linked to a switching panel that is managed with *"for"* attribute (in the *"for"* attribute the full component *"id"* is specified according to naming containers).

The togglePanel could be also switched from the side of the control instead of being strictly defined in *"switchOrder"* attribute of **<rich:togglePanel>.**

Example:

```
...
    <rich:togglePanel id="panel" initialState="empty" switchType="client">
        <f:facet name="first">
            <h:panelGroup>
                <rich:toggleControl for="helloForm:panel" value="Empty "
 switchToState="empty"/>
                <rich:toggleControl for="helloForm:panel" value=" Second"
 switchToState="second"/>
                ...//Some Content
            </h:panelGroup>
        </f:facet>
```

```
 <f:facet name="second">
            <h:panelGroup>
                <rich:toggleControl for="helloForm:panel" value="Empty "
 switchToState="empty"/>
                <rich:toggleControl for="helloForm:panel" value=" first"
 switchToState="first"/>
                .//Some Content
            </h:panelGroup>
        </f:facet>
        <f:facet name="empty">
            <h:panelGroup>
                <rich:toggleControl for="helloForm:panel" value="first "
 switchToState="first"/>
                <rich:toggleControl for="helloForm:panel" value=" second"
 switchToState="second"/>
            </h:panelGroup>
        </f:facet>
    </rich:togglePanel>
...
```

In this example the switching is performed on facets specified in the *"switchToState"* attribute.

6.74.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.*

To redefine the appearance of all **<rich:toggleControl>** components at once, you should add to your style sheets *style class* used by a **<rich:toggleControl>** component.

6.74.7. Definition of Custom Style Classes

Table 6.332. Classes names that define a component appearance

Class name	Description
rich-tglctrl	Defines styles for a toggle control

In order to redefine styles for all **<rich:toggleControl>** components on a page using CSS, it's enough to create a class with the same name and define necessary properties in it.

To change styles of particular **<rich:toggleControl>** components define your own style class in the corresponding **<rich:toggleControl>** attributes.

6.75. < rich:toolBar >

6.75.1. Description

A horizontal bar with Action items on it that accepts any JSF components as children.

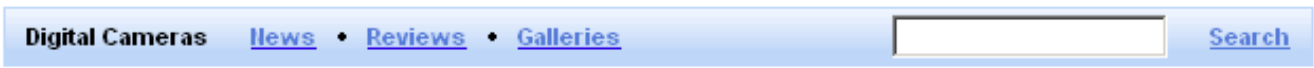


Figure 6.117. Toolbar with action items

6.75.2. Key Features

- Skinnable menu panel and child items
- Standard top menu bar that can be used in accordance with a menu component
- Grouping bar content
- Easily place content on any side of a menu bar using predefined group layout
- Predefined separators for menu items and groups
- Any content inside

Table 6.333. rich : toolBar attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
contentClass	A CSS style is to be applied to each element of tool bar content. Use this style, for example, to setup parameters of the font.
contentStyle	A CSS style is to be applied to each element of tool bar content.
height	A height of a bar in pixels. If a height is not defined, a bar height depends of the "headerFontSize" skin parameter.
id	Every component may have a unique id that is automatically created if omitted
itemSeparator	A separator between items on a bar. Possible values are none, line, square, disc and grid.
rendered	If "false", this component is not rendered
separatorClass	A CSS class to be applied to tool bar separators.
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
width	A width of a bar that can be defined in pixels or as percentage. The default value is 100%.

Table 6.334. Component identification parameters

Name	Value
component-type	org.richfaces.ToolBar

Name	Value
component-class	org.richfaces.component.html.HtmlToolBar
component-family	org.richfaces.ToolBar
renderer-type	org.richfaces.ToolBarRenderer
tag-class	org.richfaces.taglib.ToolBarTag

6.75.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:toolBar>
        <!--//...Set of action or other JSF components-->
    </rich:toolBar>
...
```

6.75.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlToolBar;
...
HtmlToolBar myToolBar = new HtmlToolBar();
...
```

6.75.5. Details of Usage

A toolBar is a wrapper component that facilitates creation of menu and tool bars. All components defined inside are located on a stylized bar with possibility to group, arrange on the both bar sides, and place predefined separators between them.

Grouping and an input side definition is described for toolBarGroup that defines this functionality.

Separators are located between components with the help of the *"itemSeparator"* attribute with four predefined values:

- none
- line
- square
- disc

For example, when setting a separator of a disc type, the following result is produced:

Figure 6.118. Toolbar with a *"disc"* separator

Moreover, for toolBar style *"width"* and *"height"* attributes are placed above all.

6.75.6. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:toolBar>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:toolBar>** component

6.75.7. Skin Parameters Redefinition

Table 6.335. Skin parameters redefinition for a component exterior

Skin parameters	CSS properties
panelBorderColor	border-color
headerBackgroundColor	background-color

Table 6.336. Skin parameters redefinition for a component item

Skin parameters	CSS properties
headerSizeFont	font-size
headerTextColor	color
headerWeightFont	font-weight
headerFamilyFont	font-family

6.75.8. Definition of Custom Style Classes

Table 6.337. Classes names that define a component appearance

Class name	Description
rich-toolbar	Defines styles for a toolbar element

Class name	Description
rich-toolbar-item	Defines styles for a toolbar item

In order to redefine styles for all **<rich:toolBar>** components on a page using CSS, it's enough to create class with the same names and define necessary properties in them.

To change styles of particular **<rich:toolBar>** components define your own style classes in the corresponding **<rich:toolBar>** attributes.

The component also has the standard attributes *"style"* and *"styleClass"* that could redefine an appearance of a particular component variants.

6.75.9. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/toolBar.jsf?c=toolBar] you can see the example of **<rich:toolBar>** usage and sources for the given example.

6.76. < rich:toolBarGroup >

6.76.1. Description

A group of items inside a tool bar.

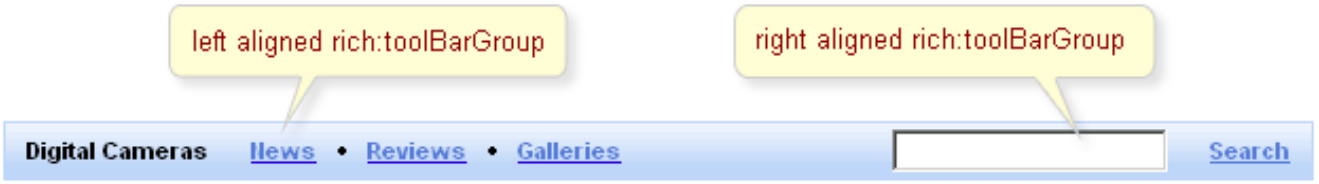


Figure 6.119. ToolbarGroup with items on it

6.76.2. Key Features

- Fully skinnable with its child items
- Grouping bar content
- Easily place content on either side of tool bar using a predefined group layout
- Predefined separators for menu items and groups
- Any content inside

Table 6.338. rich : toolBarGroup attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean

Attribute Name	Description
id	Every component may have a unique id that is automatically created if omitted
itemSeparator	"A separator for the items in a group. Possible values are "none", "line", "square", "disc" and "grid"."
location	"A location of a group on a tool bar. Possible values are "left" and "right"."
onclick	HTML: a script expression; a pointer button is clicked
ondblclick	HTML: a script expression; a pointer button is double-clicked
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
rendered	If "false", this component is not rendered
separatorClass	"A CSS class to be applied to tool bar group separators."
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute

Table 6.339. Component identification parameters

Name	Value
component-type	org.richfaces.ToolBarGroup
component-class	org.richfaces.component.html.HtmlToolBarGroup
component-family	org.richfaces.ToolBarGroup
renderer-type	org.richfaces.ToolBarGroupRenderer

Name	Value
tag-class	org.richfaces.taglib.ToolBarGroupTag

6.76.4. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:toolBar>
        ...
        <rich:toolBarGroup>
            <!--...Set of action or other JSF components-->
        </rich:toolBarGroup>
        <rich:toolBarGroup>
            <!--...Set of action or other JSF components-->
        </rich:toolBarGroup>
        ...
    </rich:toolBar>
...
```

6.76.5. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlToolBarGroup;
...
HtmlToolBarGroup myToolBarGroup = new HtmlToolBarGroup();
...
```

6.76.6. Details of Usage

A toolBarGroup is a wrapper component that groups toolBar content and facilitates creation of menu and tool bars. All components defined inside are located on a stylized bar with a possibility to group, arrange on the both bar sides, and place predefined separators between them.

Separators are located between components with the help of the *"itemSeparator"* attribute with four predefined values:

- none
- line
- square
- disc

To control the group location inside, use the *"location"* attribute with left (DEFAULT) and right values.

Example:

```
...
    <rich:toolBar itemSeparator="disc" width="500">
        <rich:toolBarGroup itemSeparator="line">
            <h:commandLink value="Command 1.1"/>
            <h:commandLink value="Command 2.1"/>
        </rich:toolBarGroup>
        <rich:toolBarGroup itemSeparator="line" location="right">
            <h:commandLink value="Command 1.2"/>
            <h:commandLink value="Command 2.2"/>
        </rich:toolBarGroup>
    </rich:toolBar>
...
```

The code result is the following:

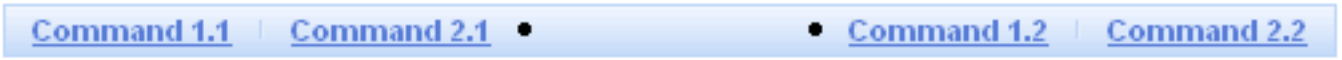


Figure 6.120. Stylized toolBarGroup

6.76.7. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:toolBarGroup>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:toolBarGroup>** component

6.76.8. Skin Parameters Redefinition

Table 6.340. Skin parameters redefinition

Skin parameters	CSS properties
headerSizeFont	font-size
headTextColor	color
headerFamilyFont	font-family

6.77. < rich:toolTip >

6.77.1. Description

The component used for creation non-modal popup that activated on some event and display some information.

Figure 6.121. Tooltip component

6.77.2. Key Features

- Highly customizable look and feel
- Different ways of data loading to tooltip
- Disablement support

Table 6.341. rich : toolTip attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
direction	Defines direction of the popup list to appear (top-right, top-left bottom-right, bottom-left, auto(default))
disabled	If false the components is rendered on the client but Js for calling â## disabled.
event	event that triggers the tooltip appearance (default = onmouseover)
followMouse	If 'true' tooltip should follow the mouse while it moves over the parent element
hideDelay	Delay in milliseconds before tooltip will be hidden.
horizontalOffset	Sets the horizontal offset between popup list and mouse pointer
id	Every component may have a unique id that is automatically created if omitted
layout	Allowed values: "inline" or "block". Block/inline mode flag. Tooltip will contain div/span elements accordingly.
mode	controls the way of data loading to tooltip and should have following values â##clientâ## (default), â##ajaxâ##
onclick	HTML: a script expression; a pointer button is clicked

Attribute Name	Description
oncomplete	JavaScript code for call after the tooltip shown
ondblclick	HTML: a script expression; a pointer button is double-clicked
onhide	JavaScript code for call after the tooltip hidden
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
onshow	JavaScript code for call after the tooltip called (some element overed) but before its requesting
rendered	If "false", this component is not rendered
showDelay	Delay in milliseconds before tooltip will be displayed.
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
value	Label on the tooltip
verticalOffset	Sets the vertical offset between popup list and mouse pointer
zorder	The same as CSS z-index for toolTip.

Table 6.342. Component identification parameters

Name	Value
component-type	org.richfaces.component.toolTip
component-class	org.richfaces.component.html.HtmltoolTip
component-family	org.richfaces.component.toolTip

Name	Value
renderer-type	org.richfaces.renderkit.html.toolTipRenderer
tag-class	org.richfaces.taglib.HtmltoolTipTag

6.77.3. Creating the Component with a Page Tag

To create the simplest variant of toolTip on a page, use the following syntax:

Example:

```
...
<h:commandButton value="Button">
 <rich:toolTip value="toolTip content"/>
</h:commandButton>
...
```

6.77.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmltoolTip;
...
HtmltoolTip mytoolTip = new  HtmltoolTip();
...
```

6.77.5. Details of Usage

toolTip main area is a simple rectangle area with any information inside. The content may be defined via "value" attribute as text or via any nested content. When both are defined, the value is displayed as text and nested content after the text. toolTip stretches if the content more than the toolTip sizes.

There is possibility to define a facet with the name "defaultContent". This facet provides the default content to display while the main content is loaded to a page in an Ajax mode. Thus when toolTip called in an Ajax mode, it appears with the content defined in the facet and when loading is completed, the content is changed to a loaded one.

Here is an example:

Example:

```
...
<h:commandLink value="Simple Link">
 <rich:toolTip followMouse="true" direction="top-right" mode="ajax"
 value="#{bean.toolTipContent}" horizontalOffset="5"
  verticalOffset="5" layout="block">
  <f:facet name="defaultContent">
   <f:verbatim>DEFAULT toolTip CONTENT</f:verbatim>
  </f:facet>
 </rich:toolTip>
```

```
</h:commandLink>
...
```

This is the result:

Figure 6.122. toolTip component with default content

And after toolTip loaded it will be changed to next one:

Figure 6.123. toolTip component with loaded content

By default, toolTip appears smart positioned. But as you can see from the previous example, you can define an appearance direction via the corresponding attribute "direction". And also it's possible to define vertical and horizontal offsets relatively to a mouse position.

toolTip appears attached to the corner dependent on the *"direction"* attribute. By default it is positioned bottom-right. toolTip activation occurs after a defined event (default=mouseover) on the parent component takes into consideration the "delay" attribute (default=0) or after calling JS API function Show(). toolTip deactivation occurs after mouseout event on the parent component (excepting the situation when the mouse is hovered onto the toolTip itself) or after calling JS API function Hide().

Note:

It is recommended to define parent component "id" for correction of toolTip work.

The attribute *"for"* is used for defining the *"id"* of an element a toolTip should be attached to. Look at the example:

Example:

```
...
<div id="elementId">
      <rich:toolTip for="elementId">Using a toolTip<rich:toolTip>
       <p>The first simple example<p>
</div>
...
<div id="elementId">
        <p>The second simple example<p>
</div>
<rich:toolTip for="elementId">Using a toolTip<rich:toolTip>
...
```

Here, the attribute *"for"* of a **<rich:toolTip>** component is required. Whithout it an example doesn't work because HTML elements aren't presented in component tree built by facelets.

The *"mode"* attribute is provided you to control the way of data loading to toolTip. It has following values:

- Client
- Ajax

In a client mode, toolTip content is rendered once on the server and could be reRendered only via external submit. In an Ajax mode, toolTip content is requested from server every activation.

Disabled toolTip is rendered to a page as usual but JS that responds for its activation is disabled until Enable() is called.

Moreover, to add some JavaScript effects, client events defined on it are used:

Standart:

- onclick
- ondblclick
- onmouseout
- onmousemove
- onmouseover

Special:

- onshow - Called after the toolTip is called (some element hovered) but before its request
- oncomplete - Called just after the toolTip is shown
- onhide - Called after the toolTip is hidden

6.77.6. JavaScript API

Table 6.343. JavaScript API

Function	Description
Show()	Shows the corresponding toolTip
Hide()	Hides the corresponding toolTip
Enable()	Enables the corresponding toolTip
Disable()	Disables the corresponding toolTip

6.77.7. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:toolTip>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:toolTip>** component

6.77.8. Skin Parameters Redefinition

Table 6.344. Skin parameters redefinition for a component

Skin parameters	CSS properties
tipBackgroundColor	background-color
tipBorderColor	border-color
generalSizeFont	font-size
generalFamilyFont	font-family
generalFontColor	color

6.77.9. Definition of Custom Style Classes

Table 6.345. Classes names that define a component appearance

Class name	Description
rich-tool-tip	Defines styles for a wrapper or element of a toolTip

It depends on **<rich:toolTip>** layout what a wrapper element ** or * * to choose.

In order to redefine styles for all **<rich:toolTip>** components on a page using CSS, it's enough to create class with the same name and define necessary properties in it.

To change styles of particular **<rich:toolTip>** components define your own style class in the corresponding **<rich:toolTip>** attributes

6.77.10. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/toolTip.jsf?c=toolTip] you can see the example of **<rich:toolTip>** usage and sources for the given example.

6.78. < rich:tree >

6.78.1. Description

A component for a tree-like presentation of data. It includes built-in drag and drop support for its child elements.

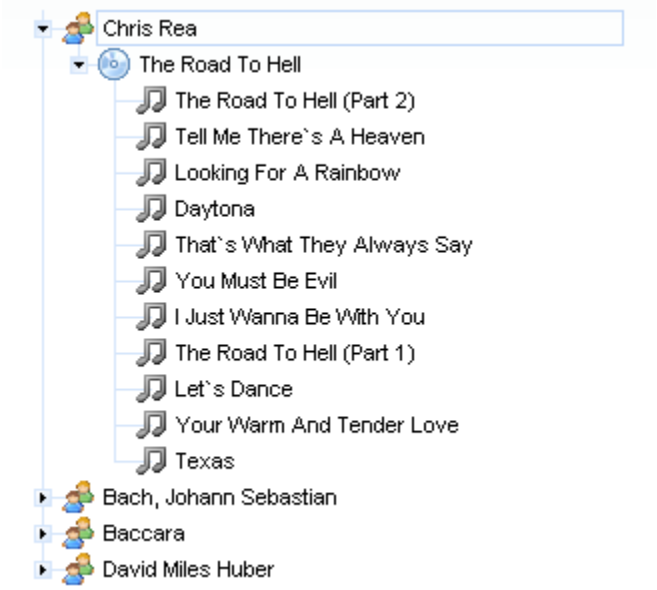


Figure 6.124. Expanded tree with child elements

On the screenshot above, there is an example of the tree with an expanded node. This node contains its own node with several leaves. Besides, it's possible to choose your own icons for tree nodes.

6.78.2. Key Features

- Highly customizable look-and-feel

  This feature provides rich possibilities to change an appearance of a component into different styles.

- Built-in drag and drop support

  This feature allows programming DnD possibility for the **<rich:tree>** component so that it would be possible to change a placement of nodes in a tree simply by dropping a certain node from one place to another. Look at the screenshot below:

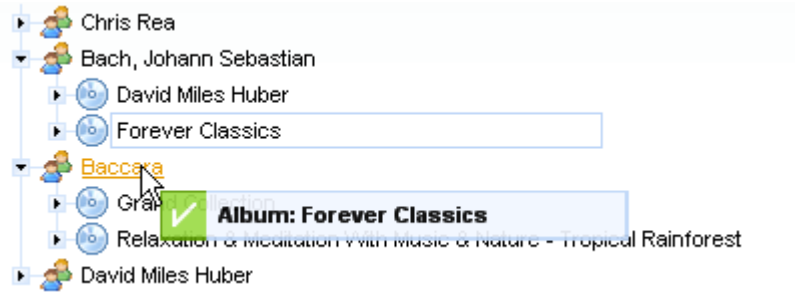


Figure 6.125. Drag and drop support

Here, an appropriate CD-disk is been moving from one album to the next one.

- Built-in Ajax processing
- Possibility to define a visual representation by node type

- Support of several root elements in a tree

Table 6.346. rich : tree attributes

Attribute Name	Description
acceptedTypes	List of drag types to be processed by the current drop zone
adviseNodeOpened	MethodBinding pointing at a method accepting an org.richfaces.component.UITree with return of java.lang.Boolean type. If returned value is: java.lang.Boolean. TRUE, a particular treeNode is expanded; java.lang.Boolean.FALSE, a particular treeNode is collapsed; null, a particular treeNode saves the current state
adviseNodeSelected	MethodBinding pointing at a method accepting an org.richfaces.component.UITree with return of java.lang.Boolean type. If returned value is: java.lang.Boolean. TRUE, a particular treeNode is selected; java.lang.Boolean.FALSE, a particular treeNode is unselected; null, a particular treeNode saves the current state
ajaxSingle	if "true", submits ONLY one field/link, instead of all form controls
ajaxSubmitSelection	If "true", an Ajax request to be submit when selecting node
binding	The attribute takes a value-binding expression for a component property of a backing bean
bypassUpdates	If "true", after process validations phase it skips updates of model beans on a force render response. It can be used for validating components input
changeExpandListener	Listener called on expand/collapse event on the node
componentState	It defines EL-binding for a component state for saving or redefinition
data	Serialized (on default with JSON) data passed on the client by a developer on AJAX request. It's accessible via "data.foo" syntax
dragIndicator	An indicator component id
dragListener	MethodBinding representing an action listener method that will be notified after drag operation

Attribute Name	Description
dragType	Key of a drag object. It's used to define a necessity of processing the current dragged element on the drop zone side
dragValue	Data to be sent to the drop zone after a drop event
dropListener	MethodBinding representing an action listener method that will be notified after drop operation
dropValue	Data to be processed after a drop event
eventsQueue	Name of requests queue to avoid send next request before complete other from same event. Can be used to reduce number of requests of frequently events (key press, mouse move etc.)
focus	id of element to set focus after request completed on client side
highlightedClass	Corresponds to the HTML class attribute. Applied to highlighted node
icon	The icon for node
iconCollapsed	The icon for collapsed node
iconExpanded	The icon for expanded node
iconLeaf	An icon for component leaves
id	Every component may have a unique id that is automatically created if omitted
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response isn't actual now
immediate	A flag indicating that this component value must be converted and validated immediately (during an Apply Request Values phase), rather than waiting until a Process Validations phase
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. If "false" (default) updates all rendered by ajax region components
nodeFace	Node face facet name

Attribute Name	Description
nodeSelectListener	MethodBinding representing an action listener method that will be notified after selection of node.
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
onclick	HTML: a script expression; a pointer button is clicked
oncollapse	HTML: script expression to invoke on node collapsing
oncomplete	JavaScript code for call after request completed on client side
ondblclick	HTML: a script expression; a pointer button is double-clicked
ondragend	A JavaScript event handler called after a drag operation
ondragenter	A JavaScript event handler called on enter draggable object to zone
ondragexit	A JavaScript event handler called after a drag object leaves zone
ondragstart	A JavaScript event handler called before drag object
ondrop	It's an event that is called when something is dropped on a drop zone
ondropend	A JavaScript handler for event fired on a drop even the drop for a given type is not available
onexpand	HTML: script expression to invoke on node expansion
onkeydown	HTML: a script expression; a key is pressed down
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
onselected	HTML: script expression to invoke on node selection

Attribute Name	Description
preserveDataInRequest	If "true", data is preserved in a request
preserveModel	It can be "state", "request", "none". The default is "request"
rendered	If "false", this component is not rendered
requestDelay	Attribute defines the time (in ms.) that the request will be wait in the queue before it is ready to send. When the delay time is over, the request will be sent to the server or removed if the newest 'similar' request is in a queue already
reRender	Id['s] (in format of call UIComponent.findComponent()) of components, rendered in case of AjaxRequest caused by this component. Can be single id, comma-separated list of Id's, or EL Expression with array or Collection
rowKeyVar	The attribute provides access to a row key in a Request scope
selectedClass	Corresponds to the HTML class attribute. Applied to selected node
showConnectingLines	If "true", connecting lines are show
stateAdvisor	ValueBinding pointing at instance of class implementing org.richfaces.component.state.TreeStateAdvisor interface.
stateVar	The attribute provides access to a component state on the client side
status	ID (in format of call UIComponent.findComponent()) of Request status component
style	CSS style(s) is/are to be applied when this component is rendered
styleClass	Corresponds to the HTML class attribute
switchType	Tree switch algorithm: "client", "server", "ajax"
timeout	Response waiting time on a particular request. If a response is not received during this time, the request is aborted

Attribute Name	Description
toggleOnClick	If "false" do not toggle node state on click. If "true", than node will be toggles on click on ether node content, or node icon. Default value is false.
typeMapping	Map between a draggable type and an indicator name on zone. it's defined with the pair (drag type:indicator name))
value	The current value for this component
var	Attribute contains a name providing an access to data defined with value

Table 6.347. Component identification parameters

Name	Value
component-type	org.richfaces.Tree
component-class	org.richfaces.component.html.HtmlTree
component-family	org.richfaces.Tree
renderer-type	org.richfaces.TreeRenderer
tag-class	org.richfaces.taglib.TreeTag

6.78.3. Creating the Component with a Page Tag

There are two cases for a tree definition: together with **<rich:recursiveTreeNodesAdaptor>** or **<rich:treeNodesAdaptor>** and without them. In the first case, it's possible to define it without *"value"* and *"var"* attributes as follows:

Example:

```
...
    <rich:tree>
        <rich:recursiveTreeNodesAdaptor roots="#{fileSystemBean.sourceRoots}"
 var="item" nodes="#{item.nodes}" />
    </rich:tree>
...
```

In the second case, it's necessary to define it with these attributes as it's shown below:

Example:

```
...
    <rich:tree value="#{library.data}" var="item" >
           <rich:treeNode  icon="/images/tree/singer.png" >
                <h:outputText value="#{item.name}" />
            </rich:treeNode>
              ...
```

```
    </rich:tree>
...
```

6.78.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlTree;
...
HtmlTree myTree = new HtmlTree();
...
```

6.78.5. Details of Usage

As it has been mentioned above the **<rich:tree>** component allows rendering any tree-like structure of data.

A bean property is passed into a tree *"value"* attribute. The property keeps a structure of "TreeNode" type instances.

There is a default class "TreeNodeImpl", which is a default implementation for TreeNode interface. TreeNode has attribute *"data"* which value is available as a request scope variable with a name that is defined by *"var"* attribute of a tree component. "XmlTreeDataBuilder" class [http://labs.jboss.com/file-access/default/members/jbossrichfaces/freezone/docs/apidoc/org/richfaces/component/xml/XmlTreeDataBuilder.html] allows transforming XML into structures of objects containing "XmlNodeData" instances as data, which could be represented by the tree component.

For particular visual representation of data **<rich:tree>** selects one of the children **<rich:treeNode>** components by type. The type is defined with the *"nodeFace"* attribute that corresponds to a value of *"type"* attribute for treeNode. An example of definition is placed below:

Example:

```
...
      <h:form>
        <rich:tree style="width:300px" value="#{library.data}" var="item"
 nodeFace="#{item.type}">
            <rich:treeNode type="artist" iconLeaf="/images/tree/singer.gif"
 icon="/images/tree/singer.gif">
                <h:outputText value="#{item.name}" />
            </rich:treeNode>
            <rich:treeNode type="album" iconLeaf="/images/tree/disc.gif"
 icon="/images/tree/disc.gif">
                <h:outputText value="#{item.title}" />
            </rich:treeNode>
            <rich:treeNode type="song" iconLeaf="/images/tree/song.gif"
 icon="/images/tree/song.gif">
                <h:outputText value="#{item.title}" />
            </rich:treeNode>
        </rich:tree>
</h:form>
...
```

This is a result:

Figure 6.126. Expanded tree with child elements

In case when *"nodeFace"* attribute isn't defined or defined but its value isn't equal to any type of all children treeNode components or this value is equal to some type, but the value of *"rendered"* attribute for this treeNode is "false" then default treeNode is used.

Default treeNode is the first node (with not defined *"type"* attribute and defined *"rendered"* attribute) from all children nodes of the tree component. If such treeNode wasn't found, the following default interior presentation is used:

Example:

```
<h: outputText value="#{varAttributeName}">
```

"varAttributeName" is a value for *"var"* attribute.

It's possible to define several **<rich:treeNode>** components with the equal values of *"type"* attribute and different values of *"rendered"* attribute. It provides the possibility to define different markup for the same **<rich:treeNode>** components type. An example is placed below.

Example:

```
...
      <h:form>
        <rich:tree style="width:300px" value="#{library.data}" var="item"
 nodeFace="#{item.type}">
            <rich:treeNode type="artist" iconLeaf="/images/tree/singer.gif"
 icon="/images/tree/singer.gif"
                        rendered="#{item.exist}">
                <h:outputText value="#{item.name}" />
            </rich:treeNode>
          <rich:treeNode type="artist" iconLeaf="/images/tree/singer.gif"
 icon="/images/tree/singer_absent.gif"
                        rendered="#{not item.exist}">
                <h:outputText value="#{item.name}" />
            </rich:treeNode>
 ...
        </rich:tree>
</h:form>
...
```

The example represents definition of two different **<rich:treeNode>** components. The first specifies the album that's available for sale, the other specifies the album that is not available. The result is shown on the following screenshot:

Figure 6.127. Using the *"type"* and the *"rendered"* attributes

You can define an EL-expression for *"nodeFace"* attribute. See an example:

Example:

```
nodeFace="#{data.name != 'param-value' ? 'artist' : 'album'}"
```

Switching on treeNode could be performed in three modes. Modes could be specified with *"switchType"* attribute.

- Ajax - Ajax submission is used for switching
- Server - regular form submission request is used
- Client - switching is done as a whole on a client, no interaction with the server presents

If *"ajaxSubmitSelection"* attribute value set to *"true"* than any change in selection initiates an Ajax request to the server.

The *"icon"*, *"iconCollapsed"*, *"iconExpanded"*, *"iconLeaf"* attributes define icons for the component. Also you can define icons using facets with the same names. If the facets are defined, the corresponding attributes are ignored and facets contents are used as icons. By default the width of a rendered facet area is 16px.

Example:

```
...
    <rich:tree ....>
        ...
        <f:facet name="icon">
            <h:graphicImage value="/images/tree/singer.gif "/>
        </f:facet>
        <f:facet name="iconCollapsed">
            <h:graphicImage value="/images/tree/singer.gif " />
        </f:facet>
        <f:facet name="iconExpanded">
            <h:graphicImage value="/images/tree/singer.gif " />
```

```
        </f:facet>
        <f:facet name="iconLeaf">
            <h:graphicImage value="/images/tree/song.gif " />
        </f:facet>
          ...
    </rich:tree>
...
```

The **<rich: tree>** component can be used together with **<rich: treeNodeAdaptor>** . In this case there is no need to specify the attributes *"value"* and *"var"* . Besides, visual representation shouldn't be defined right in the tree. In this case a tree tag is intended mainly for defining common attributes such as *"ajaxSubmitSelection"* , for instance.

6.78.6. Built-In Drag and Drop

The **<rich: tree>** component functionality provides a built-in support for Drag and Drop operations. The main usage principles are the same as for RichFaces DnD wrapper components. Hence, to get additional information on the topic, read the corresponding chapters:"rich:dndParam", "rich:dragSupport", "rich:dragIndicator", "rich:dropSupport". As treeNodes could be Drag, Drop or DnD elements, a tree can include the following attributes groups.

Table 6.348. Drag attributes group

dragValue	**Element value drag passing into processing after a Drop event**
dragListener	A listener that processes a Drag event
dragIndicator	Id of a component that is used as drag pointer during the drag operation
dragType	Defines a drag zone type that is used for definition of a dragged element, which can be accepted by a drop zone

Table 6.349. Drop attributes group

dropValue	**Element value drop passed into processing after Drop events .**
dropListener	A listener that processes a Drop event.
acceptedTypes	Drag zone names are allowed to be processed with a Drop zone.
typeMapping	Drag zones names mapping on the corresponding drop zone parameters.

An example of usage is placed below.

Example:

```
...
    <h:form>
```

```
        <rich:tree dragIndicator=":treeDragIndicator"
dropListener="#{libraryAjaxTree.processDrop}" style="width:300px"
value="#{libraryAjaxTree.data}" var="item" nodeFace="#{item.type}">
            <rich:treeNode type="artist" acceptedTypes="album"
iconLeaf="/images/tree/group.gif" icon="/images/tree/group.gif">
                <h:outputText value="#{item.name}" />
            </rich:treeNode>
            <rich:treeNode type="album" dragType="album" acceptedTypes="song"
iconLeaf="/images/tree/cd.gif" icon="/images/tree/cd.gif">
                <h:outputText value="#{item.title}" />
                <rich:dndParam name="label" type="drag" value="Album: #{item.title}"
/>
            </rich:treeNode>
            <rich:treeNode type="song" dragType="song"
iconLeaf="/images/tree/music.gif" icon="/images/tree/music.gif">
                <h:outputText value="#{item.title}" />
                <rich:dndParam name="label" type="drag" value="Song: #{item.title}"
/>
            </rich:treeNode>
        </rich:tree>
    </h:form>
...
```

In the example a song from one album can be dragged into other because for the second treeNode with *"type"* ="album" was defined attribute *"acceptedTypes"* ="song". Its value is equal to the value of the *"type"* attribute defined for the third treeNode (see picture below). Also an album can be dragged into treeNode with *"type"* ="artist".

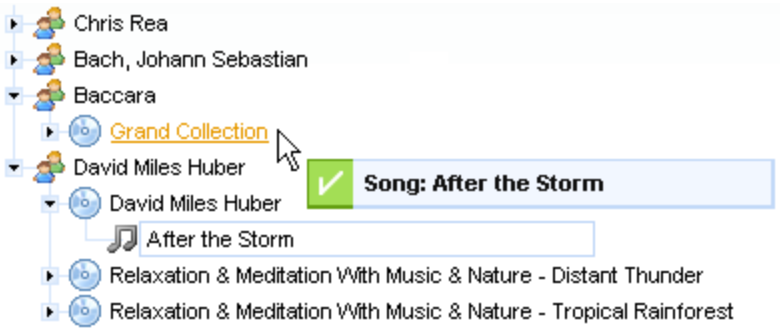


Figure 6.128. DnD operations

6.78.7. Events handling

Listeners classes that process events on the server side are defined with the help of:

- nodeSelectListener is called during request sending on a node selecting event (if request sending on this event is defined)
- dropListener processes a Drop event
- dragListener processes a Drug event
- changeExpandListener processes expand/collapse event of a treeNode

Listener methods can be defined using the following attributes or using nested tags.

Client event attributes are:

- onexpand - expands a node event
- oncollapse - collapses a node event
- ondragexit - element passing out from a tree zone event
- ondragstart - drags a start event
- ondragend - drags an end event (a drop event)
- ondragenter - drags an element appearing on a tree event

They can be used to add some JavaScript effects.

Also standart HTML event attributes like *"onclick"* , *"onmousedown"* , *"onmouseover"* and etc. could be used. Event handlers of a **<rich:tree>** component capture events occured on any tree part. But event handlers of treeNode capture events occured on treeNode only, except for children events.

6.78.8. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:tree>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:tree>** component

6.78.9. Skin Parameters Redefinition:

There is only one skin parameter for **<rich:tree>** . As it's a wrapper component for **<rich:treeNode>** components, look and feel customization is described in the corresponding section.

Table 6.350. Skin parameters for a wrapper element

Skin parameters	CSS properties
overAllBackground	background-color

6.78.10. Definition of Custom Style Classes

Table 6.351. Classes names that define a component appearance

Class name	Description
rich-tree	Defines styles for a wrapper element of a tree

In order to redefine styles for all **<rich:tree>** components on a page using CSS, it's enough to create a class with the same names and define necessary properties in them.

To change styles of particular **<rich:tree>** components define your own style class in the corresponding **<rich:tree>** attribute.

6.78.11. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/tree.jsf?c=tree] you can see the example of **<rich:tree>** usage and sources for the given example.

How to Expand/Collapse Tree Nodes from code, see here [http://labs.jboss.com/wiki/ExpandCollapseTreeNodes].

6.79. < rich:treeNode >

6.79.1. Description

A component is used for designing templates for nodes definition.

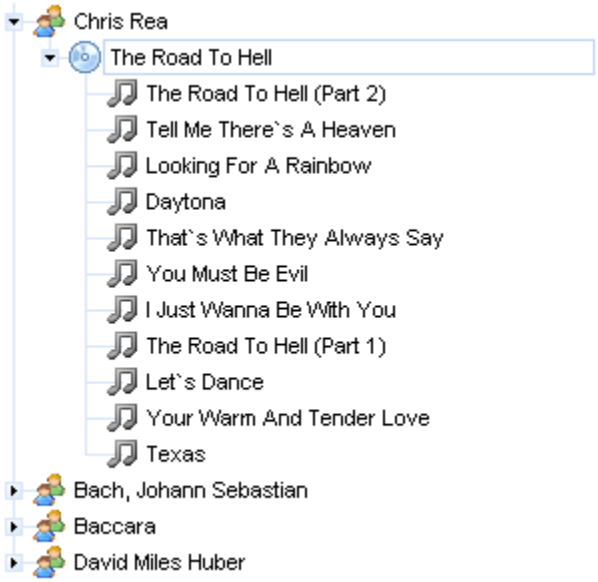


Figure 6.129. TreeNode component

6.79.2. Key Features

Table 6.352. rich : treeNode attributes

Attribute Name	Description
acceptedTypes	List of drag types to be processed by the current drop zone
ajaxSingle	if "true", submits ONLY one field/link, instead of all form controls
ajaxSubmitSelection	An algorithm of AJAX request submission. "inherit", "true", "false" values are possible
binding	The attribute takes a value-binding expression for a component property of a backing bean

Attribute Name	Description
bypassUpdates	If "true", after process validations phase it skips updates of model beans on a force render response. It can be used for validating components input
changeExpandListener	Listener called on expand/collapse event on the node
data	Serialized (on default with JSON) data passed on the client by a developer on AJAX request. It's accessible via "data.foo" syntax
dragIndicator	Id of the dragIndicator component used as drag operation cursor
dragListener	MethodBinding representing an action listener method that will be notified after drag operation
dragType	Key of a drag object. It's used to define a necessity of processing the current dragged element on the drop zone side
dragValue	Data to be sent to the drop zone after a drop event
dropListener	MethodBinding representing an action listener method that will be notified after drop operation
dropValue	Data to be processed after a drop event
eventsQueue	Name of requests queue to avoid send next request before complete other from same event. Can be used to reduce number of requests of frequently events (key press, mouse move etc.)
focus	id of element to set focus after request completed on client side
highlightedClass	Corresponds to the HTML class attribute. Applied to highlighted node
icon	The icon for node
iconCollapsed	The icon for collapsed node
iconExpanded	The icon for expanded node
iconLeaf	An icon for component leaves
id	Every component may have a unique id that is automatically created if omitted
ignoreDupResponses	Attribute allows to ignore an Ajax Response produced by a request if the newest 'similar' request is in a queue

Attribute Name	Description
	already. ignoreDupResponses="true" does not cancel the request while it is processed on the server, but just allows to avoid unnecessary updates on the client side if the response isn't actual now
limitToList	If "true", updates on client side ONLY elements from this 'reRender' property. If "false" (default) updates all rendered by ajax region components
nodeClass	Name of node CSS class
nodeSelectListener	MethodBinding representing an action listener method that will be notified after selection of node.
onbeforedomupdate	JavaScript code for call before DOM has been updated on client side
onclick	HTML: a script expression; a pointer button is clicked
oncollapse	HTML: script expression to invoke on node collapsing
oncomplete	JavaScript code for call after request completed on client side
oncontextmenu	JavaScript handler to be called on right click. Returning false prevents default browser context menu from being displayed
ondblclick	HTML: a script expression; a pointer button is double-clicked
ondragend	A JavaScript event handler called after a drag operation
ondragenter	A JavaScript event handler called on enter draggable object to zone
ondragexit	A JavaScript event handler called after a drag object leaves zone
ondragstart	A JavaScript event handler called before drag object
ondrop	It's an event that is called when something is dropped on a drop zone
ondropend	A JavaScript handler for event fired on a drop even the drop for a given type is not available
onexpand	HTML: script expression to invoke on node expansion
onkeydown	HTML: a script expression; a key is pressed down

Attribute Name	Description
onkeypress	HTML: a script expression; a key is pressed and released
onkeyup	HTML: a script expression; a key is released
onmousedown	HTML: script expression; a pointer button is pressed down
onmousemove	HTML: a script expression; a pointer is moved within
onmouseout	HTML: a script expression; a pointer is moved away
onmouseover	HTML: a script expression; a pointer is moved onto
onmouseup	HTML: script expression; a pointer button is released
onselected	HTML: script expression to invoke on node selection
rendered	If "false", this component is not rendered
requestDelay	Attribute defines the time (in ms.) that the request will be wait in the queue before it is ready to send. When the delay time is over, the request will be sent to the server or removed if the newest 'similar' request is in a queue already
reRender	Id['s] (in format of call UIComponent.findComponent()) of components, rendered in case of AjaxRequest caused by this component. Can be single id, comma-separated list of Id's, or EL Expression with array or Collection
selectedClass	Corresponds to the HTML class attribute. Applied to selected node
status	ID (in format of call UIComponent.findComponent()) of Request status component
timeout	Response waiting time on a particular request. If a response is not received during this time, the request is aborted
type	A node type
typeMapping	Map between a draggable type and an indicator name on zone. it's defined with the pair (drag type:indicator name))

Table 6.353. Component identification parameters

Name	Value
component-type	org.richfaces.TreeNode
component-class	org.richfaces.component.html.HtmlTreeNode
component-family	org.richfaces.TreeNode
renderer-type	org.richfaces.TreeNodeRenderer
tag-class	org.richfaces.taglib.TreeNodeTag

6.79.3. Creating the Component with a Page Tag

Here is a simple example as it could be used on a page:

Example:

```
...
    <rich:tree ... faceNode="simpleNode">
        <rich:treeNode type="simpleNode">
            <!--Tree node data displaying template-->
        </rich:treeNode>
    </rich:tree>
...
```

6.79.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlTreeNode;
...
HtmlTreeNode myPanel = new HtmlTreeNode();
...
```

6.79.5. Details of Usage

The *"icon"*, *"iconCollapsed"*, *"iconExpanded"*, *"iconLeaf"* attributes define icons for the component. Also you can define icons using facets with the same names. If the facets are defined, the corresponding attributes are ignored and facets contents are used as icons. The width of a rendered facet area is 16px.

```
...
    <rich:tree ...>
        ...
        <rich:treeNode ...>
            <f:facet name="icon">
                <hutputText value="A"/>
            </f:facet>
            <f:facet name="iconCollapsed">
                <hutputText value="B"/>
            </f:facet>
            <f:facet name="iconExpanded">
```

```
                <hutputText value="C"/>
            </f:facet>
            <f:facet name="iconLeaf">
                <hutputText value="D"/>
            </f:facet>
        </rich:treeNode>
        ...
    </rich:tree>
...
```

6.79.6. Details of Usage

As it has been mentioned above, treeNode defines a template for nodes rendering in a tree. Thus, during XML document rendering (a web.xml application) as a tree, the following nodes output (passed via var="data" on a tree) happens:

Example:

```
...
    <rich:tree ... faceNode="simpleNode" ... value="#{bean.data}" var="data">
        <rich:treeNode type="simpleNode">
            <h:outputText value="context-param:"/>
            <h:inputText value="#{data.name}"/>
        </rich:treeNode>
    </rich:tree >
...
```

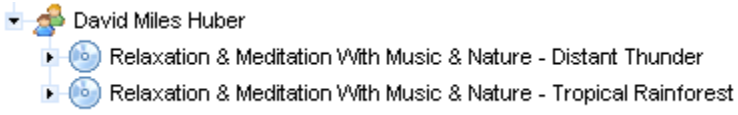


Figure 6.130. Nodes output

Hence, outputText outputs the "context-param" string and then the input is output for the data.name element of this node.

Different nodes for rendering could be defined depending on some conditions on the tree level. Each condition represents some rendering template. To get more information on various treeNodesAdaptorAdaptor definition for nodes, see the tree component chapter.

Switching between expanded/collapsed modes is also managed on the tree level and defined in the corresponding section.

Default nodes of the tree level as well as ones defined with the treeNodesAdaptorAdaptor component could send Ajax requests when selected with the mouse, it's managed with the *"ajaxSubmitSelection"* attribute (true/false).

6.79.7. Built-in Drag and Drop

The main information on Drag and Drop operations is given in the corresponding paragraph of the tree component chapter. It's only necessary to mention that each node could also be a Drag element as well

as a Drop container, i.e. the container and the element have all attributes, listeners and ways of behavior similar to the ones of the **<rich:draggable>** and **<rich:dropZone>** components simultaneously.

6.79.8. Events Handling

Just as Drag and Drop operations it corresponds to the one described on the tree component level for a default Node.

6.79.9. Look-and-Feel Customization

For skinnability implementation, the components use a *style class redefinition method.* Default style classes are mapped on *skin parameters.*

There are two ways to redefine the appearance of all **<rich:treeNode>** components at once:

- Redefine the corresponding skin parameters
- Add to your style sheets *style classes* used by a **<rich:treeNode>** component

6.79.10. Skin Parameters Redefinition

Table 6.354. Skin parameters for a node element

Skin parameters	CSS properties
panelTextColor	color
preferableDataSizeFont	font-size
preferableDataFamilyFont	font-family

Table 6.355. Skin parameters for a selected element

Skin parameters	CSS properties
headerBackgroundColor	border-color
panelTextColor	color
selectControlColor	color

Table 6.356. Skin parameters for a mouseovered element

Skin parameters	CSS properties
selectControlColor	color

6.79.11. Definition of Custom Style Classes

On the screenshot there are classes names that define styles for component elements.

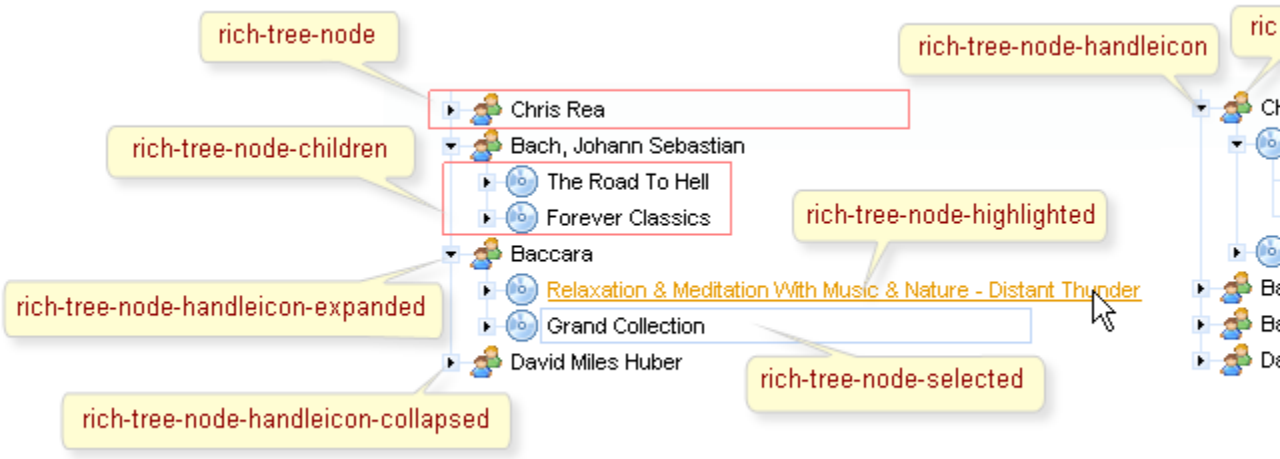


Figure 6.131. Classes names

Table 6.357. Classes names that define a node element

Class name	Description
rich-tree-node	Defines styles for a tree node
rich-tree-node-handleicon	Defines styles for a tree node handleicon
rich-tree-node-children	Defines styles for all tree node subnodes
rich-tree-node-text	Defines styles for a tree node text
rich-tree-node-icon	Defines styles for a tree node icon
rich-tree-node-icon-leaf	Defines styles for a tree node icon leaf

Table 6.358. Classes names that define states for a node element

Class name	Description
rich-tree-node-selected	Defines styles for a selected tree node
rich-tree-node-highlighted	Defines styles for a highlighted tree node
rich-tree-node-handleicon-collapsed	Defines styles for a collapsed tree node handleicon
rich-tree-node-handleicon-expanded	Defines styles for a expanded tree node handleicon

In order to redefine the style for all **<rich:treeNode>** components on a page using CSS, it's enough to create classes with the same names and define the necessary properties in them.

To change the style of particular **<rich:treeNode>** components define your own style classes in the corresponding **<rich:treeNode>** attributes.

It is also possible to change look and feel of specific **<rich:treeNode>** with the help of defining for them *"selectedClass"* and *"highlightedClass"* attributes by their specific classes.

6.79.12. Relevant Resources Links

How to Expand/Collapse Tree Nodes from code see here [http://labs.jboss.com/wiki/ExpandCollapsetreeNodesAdaptor].

6.80. < rich:changeExpandListener >

6.80.1. Description

The **<rich:changeExpandListener>** represents an action listener method that is notified on an expand/collapse event on the node.

6.80.2. Key Features

- Allows to define some "changeExpand" listeners for the component

Table 6.359. rich : changeExpandListener attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
type	Attribute defines the fully qualified Java class name for listener

Table 6.360. Component identification parameters

Name	Value
listener-class	org.richfaces.event.NodeExpandedListener
event-class	org.richfaces.event.NodeExpandedEvent
tag-class	org.richfaces.taglib.ChangeExpandListenerTag

6.80.3. Creating the Component with a Page Tag

Simple Component definition on a page:

Example:

```
...
 <rich:changeExpandListener type="demo.Bean"/>
...
```

6.80.4. Creating the Component Dynamically Using Java

Example:

```
package demo;

public class ImplBean implements org.richfaces.event.NodeExpandedListener{
 ...
}
```

```
import demo.ImplBean;
...
ImplBean myListener = new ImplBean();
...
```

6.80.5. Details of usage

The <rich:changeExpandListener> is used as a nested tag with <rich:tree> and <rich:treeNode> components.

Attribute *"type"* defines the fully qualified Java class name for the listener. This class should implement org.richfaces.event.NodeExpandedListener interface.

The typical variant of using:

```
...
<rich:tree switchType="server" value="#{project.data}" var="item"
 nodeFace="#{item.type}">
 <rich:changeExpandListener type="demo.ListenerBean"/>
 ...
 <!-- Tree nodes -->
 ...
</rich:tree>
...
```

Java bean source:

```
package demo;

import org.richfaces.event.NodeExpandedEvent;

public class ListenerBean implements org.richfaces.event.NodeExpandedListener{
...
 public void processExpansion(NodeExpandedEvent arg0){
  //Custom Developer Code
 }
...
}
```

6.80.6. Look-and-Feel Customization

<rich:changeExpandListener> has no skin parameters and custom style classes, as the component isn't visual.

6.81. < rich:nodeSelectListener >

6.81.1. Description

The **<rich:nodeSelectListener>** represents an action listener method that will be notified after selection of node.

6.81.2. Key Features

- Allows to define some "nodeSelect" listeners for the component

Table 6.361. rich : nodeSelectListener attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
type	Attribute defines the fully qualified Java class name for listener

Table 6.362. Component identification parameters

Name	Value
listener-class	org.richfaces.event.NodeSelectedListener
event-class	org.richfaces.event.NodeSelectedEvent
tag-class	org.richfaces.taglib.NodeSelectListenerTag

6.81.3. Creating the Component with a Page Tag

Simple Component definition on a page:

Example:

```
...
 <rich:nodeSelectListener type="demo.Bean"/>
...
```

6.81.4. Creating the Component Dynamically Using Java

Example:

```
package demo;

public class ImplBean implements org.richfaces.event.NodeSelectListener{
 ...
}
```

```
import demo.ImplBean;
...
ImplBean myListener = new ImplBean();
...
```

6.81.5. Details of usage

The <rich:nodeSelectListener> is used as nested tag with <rich:tree> and <rich:treeNode> components.

Attribute *"type"* defines the fully qualified Java class name for listener. This class should implement org.richfaces.event.NodeSelectedListener interface.

The typical variant of using:

```
...
<rich:tree switchType="server" value="#{project.data}" var="item"
 nodeFace="#{item.type}">
 <rich:nodeSelectListener type="demo.ListenerBean"/>
 ...
 <!-- Tree nodes -->
 ...
</rich:tree>
...
```

Java bean source:

```
package demo;

import org.richfaces.event.NodeSelectedEvent;

public class ListenerBean implements org.richfaces.event.NodeSelectedListener{
...
 public void processSelection(NodeSelectedEvent arg0){
  //Custom Developer Code
 }
...
}
```

6.81.6. Look-and-Feel Customization

<rich:nodeSelectListener> has no skin parameters and custom style classes, as the component isn't visual.

6.82. < rich:treeNodesAdaptor >

6.82.1. Description

The rich:treeNodesAdaptor provides possibility to define data models and create representations for them.

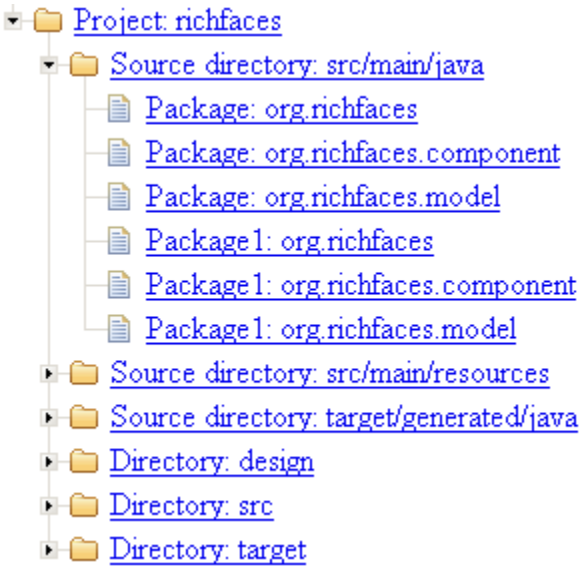


Figure 6.132. Expanded tree with treeNodesAdaptor

6.82.2. Key Features

- Allows to define combined data models
- Possibility to define nodes for processing via attributes

Table 6.363. rich : treeNodesAdaptor attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
id	Every component may have a unique id that is automatically created if omitted
includedNode	This boolean expression is used to define which elements are processed
nodes	Defines collection to use at the other (non-top) levels of iteration
rendered	If "false", this component is not rendered
var	A request-scope attribute via which the data object for the current collection element will be used when iterating

Table 6.364. Component identification parameters

Name	Value
component-type	org.richfaces.TreeNodesAdaptor

Name	Value
component-class	org.richfaces.component.html.HtmlTreeNodesAdaptor
component-family	org.richfaces.TreeNodesAdaptor
tag-class	org.richfaces.taglib.TreeNodesAdaptorTag

6.82.3. Creating the Component with a Page Tag

To create the simplest variant of rich:treeNodesAdaptor on a page, use the following syntax:

Example:

```
...
<rich:treeNodesAdaptor var="issue" nodes="#{model.issues}">
 ...
 <rich:treeNode>
  <!-- node content -->
 </rich:treeNode>
 ...
 <!-- Others nodes -->
 ...
</rich:treeNodesAdaptor>
...
```

6.82.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlTreeNodesAdaptor;
...
HtmlTreeNodesAdaptor myTreeNodesAdaptor = new HtmlTreeNodesAdaptor();
...
```

6.82.5. Details of Usage

The typical variant of using:

```
...
 <rich:tree adviseNodeOpened="#{treeModelBean.adviseNodeOpened}" switchType="client">
  <rich:treeNodesAdaptor id="project" nodes="#{loaderBean.projects}" var="project">
   <rich:treeNode>
    <h:commandLink action="#{project.click}" value="Project: #{project.name}" />
   </rich:treeNode>
   <rich:treeNodesAdaptor id="srcDir" var="srcDir" nodes="#{project.srcDirs}">
    <rich:treeNode>
     <h:commandLink action="#{srcDir.click}" value="Source directory: #{srcDir.name}"
 />
    </rich:treeNode>
    <rich:treeNodesAdaptor id="pkg" var="pkg" nodes="#{srcDir.packages}">
     <rich:treeNode>
      <h:commandLink action="#{pkg.click}" value="Package: #{pkg.name}" />
     </rich:treeNode>
```

```
     <rich:treeNodesAdaptor id="class" var="class" nodes="#{pkg.classes}">
      <rich:treeNode>
       <h:commandLink action="#{class.click}" value="Class: #{class.name}" />
      </rich:treeNode>
     </rich:treeNodesAdaptor>
    </rich:treeNodesAdaptor>
   </rich:treeNodesAdaptor>
  </rich:treeNodesAdaptor>
 </rich:tree>
...
```

6.82.6. Relevant Resources Links

Here [http://livedemo.exadel.com/richfaces-demo/richfaces/treeNodesAdaptor.jsf?c=treeNodesAdaptor] you can see the example of **<rich:treeNodesAdaptor >** usage and sources for the given example.

6.83. < rich:recursiveTreeNodesAdaptor >

6.83.1. Description

The rich:recursiveTreeNodesAdaptor provides possibility to define data models and process nodes recursively.

Figure 6.133. Expanded tree with recursiveTreeNodesAdaptor

6.83.2. Key Features

- Allows to define combined data models

- Possibility to define nodes for processing via attributes
- Allows to process nodes recursively

Table 6.365. rich : recursiveTreeNodesAdaptor attributes

Attribute Name	Description
binding	The attribute takes a value-binding expression for a component property of a backing bean
id	Every component may have a unique id that is automatically created if omitted
included	This boolean expression is used to define which elements of both collections are processed
includedNode	This boolean expression is used to define which elements are processed
includedRoot	This boolean expression is used to define which elements are processed appling to "roots" collection
nodes	Defines collection to use at the other (non-top) levels of iteration
rendered	If "false", this component is not rendered
roots	Defines collection to use at the top of iteration
var	A request-scope attribute via which the data object for the current collection element will be used when iterating

Table 6.366. Component identification parameters

Name	Value
component-type	org.richfaces.RecursiveTreeNodesAdaptor
component-class	org.richfaces.component.html.HtmlRecursiveTreeNodesAd
component-family	org.richfaces.RecursiveTreeNodesAdaptor
tag-class	org.richfaces.taglib.RecursiveTreeNodesAdaptorTag

6.83.3. Creating the Component with a Page Tag

To create the simplest variant of rich:recursiveTreeNodesAdaptor on a page, use the following syntax:

Example:

```
...
 <rich:recursiveTreeNodesAdaptor var="issue" root="#{project.root}"
 nodes="#{model.issues}">
```

```
  ...
  <rich:treeNode>
    <!-- node content -->
  </rich:treeNode>

  <!-- Others nodes -->
  ...
 </rich:recursiveTreeNodesAdaptor>
...
```

6.83.4. Creating the Component Dynamically Using Java

Example:

```
import org.richfaces.component.html.HtmlRecursiveTreeNodesAdaptor;
...
HtmlRecursiveTreeNodesAdaptor myRecursiveTreeNodesAdaptor = new
 HtmlRecursiveTreeNodesAdaptor();
...
```

6.83.5. Details of Usage

The typical variant of using:

```
...
<rich:tree adviseNodeOpened="#{treeModelBean.adviseNodeOpened}" switchType="client">
 <rich:treeNodesAdaptor id="project" nodes="#{loaderBean.projects}" var="project">

  <rich:treeNode>
   <h:commandLink action="#{project.click}" value="Project: #{project.name}" />
  </rich:treeNode>

  <rich:recursiveTreeNodesAdaptor id="dir" var="dir" root="#{project.dirs}"
 nodes="#{dir.directories}">

   <rich:treeNode>
    <h:commandLink action="#{dir.click}" value="Directory: #{dir.name}" />
   </rich:treeNode>

   <rich:treeNodesAdaptor id="file" var="file" nodes="#{dir.files}">
    <rich:treeNode>
     <h:commandLink action="#{file.click}" value="File: #{file.name}" />
    </rich:treeNode>
   </rich:treeNodesAdaptor>

   <rich:treeNodesAdaptor id="file1" var="file" nodes="#{dir.files}">
    <rich:treeNode>
     <h:commandLink action="#{file.click}" value="File1: #{file.name}" />
    </rich:treeNode>
   </rich:treeNodesAdaptor>

   <rich:recursiveTreeNodesAdaptor id="archiveEntry" var="archiveEntry"
    roots="#{dir.files}" nodes="#{archiveEntry.archiveEntries}"
    includedRoot="#{archiveEntry.class.simpleName == 'ArchiveFile'}"
    includedNode="#{archiveEntry.class.simpleName == 'ArchiveEntry'}">
```

```
    <rich:treeNode id="archiveEntryNode">
     <h:commandLink action="#{archiveEntry.click}" value="Archive entry:
 #{archiveEntry.name}" />
    </rich:treeNode>

   </rich:recursiveTreeNodesAdaptor>

  </rich:recursiveTreeNodesAdaptor>
 </rich:treeNodesAdaptor>
</rich:tree>
...
```

7

IDE Support

Red Had Developer Studio 1.0.0 [http://www.redhat.com/developers/rhds/index.html] is an IDE that provides full support for Java Server Faces, RichFaces, Facelets, Struts, and other Web technologies. In addition to this, it seamlessly combines visual and source-oriented development approaches. One of the special support feature for RichFaces is that it is available as project "capabilities". These project capabilities can be added to any existing JSF project to make the project a RichFaces JSF project by automatically adding libraries and modifying configuration files as required.

8

Links to information resources

Table 8.1. Web Resources

Resources	Links
JBoss Rich Faces	JBoss Rich Faces [http://labs.jboss.com/portal/jbossrichfaces/]
JBoss Forum	JBoss Forums [http://jboss.com/index.html?module=bb&op=main&c=27]
Rich Faces Wiki	Rich Faces Wiki [http://labs.jboss.com/wiki/RichFaces]
Rich Faces Blog	Rich Faces Blog [http://jroller.com/page/a4j]