

eXo Platform 3.0 - Knowledge Functions

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Chapter 1. Prerequisites

<http://wiki.exoplatform.org/xwiki/bin/view/Portal/Portal%20Manual#HDevelopment>

<http://wiki.exoplatform.org/xwiki/bin/view/WS/>

Chapter 2. Applications

2.1. Portlets

2.1.1. Forum Portlet

2.1.1.1. Overview

Portlet name	ForumPortlet
War name	forum.war
Description	The Forum portlet is the application for users to post and read messages on different topics.

- Declaration template

```
<portlet-application>
  <portlet>
    <application-ref>forum</application-ref>
    <portlet-ref>ForumPortlet</portlet-ref>
  </portlet>
</portlet-application>
```

2.1.1.2. Preferences

Preference name	Possible value	Default value	Description
useAjax	true, false	true	To define if links in the forum will be plain hrefs or javascript ajax (better for SEO) or not.
showForumActionBar	true, false	true	This is the UIForumActionBar. If the value is set true, the UIForumActionBar will be shown. If false, the UIForumActionBar will be hidden.
forumNewPost	day number	1	To specify if a post is new. If the post is created within the set period, it is new in the forum.
enableIPLogging	true, false	true	To enable the IP logging function in the forum. IP addresses of all posts will

Preference name	Possible value	Default value	Description
			be collected.
enableIPFiltering	true, false	true	To enable the IP filtering function in the forum. It is allowed to block IP addresses on the forums.
invisibleCategories	id categories	empty	To hide some categories. If the value is set empty, all categories of the forum will be shown.
invisibleForums	id forums	empty	To hide some forums. All forums will be shown if the value is set empty.
uploadFileSizeLimitMB	integer	20	To limit the size of uploaded files in MB in the forum.
isShowForumJump	true, false	true	To specify if the forum jump panel is shown or not.
isShowIconsLegend	true, false	true	To specify if the icon legends panel is shown or not.
isShowModerators	true, false	true	To specify if the moderators panel is shown or not.
isShowPoll	true, false	true	To specify if the poll panel is shown or not.
isShowQuickReply	true, false	true	To specify if the quick reply panel is shown or not.
isShowRules	true, false	true	To specify if the forum rules panel is shown or not.
isShowStatistics	true, false	true	To specify if the statistics panel is shown or not.

2.1.1.3. Portlet.xml

- See the portlet.xml file in the project following this path: forum/WEB-INF/portlet.xml.

2.1.1.4. Events

Name	Description	
ForumLinkEvent	To set the render for UIForumLinkPortlet and set values for UIForumLinks.	
ReLoadPortletEvent	To reload UIForumPortlet.	
OpenLink	To update values for UIForumLinks.	
ForumPollEvent	To setRender for UIForumPollPortlet.	
ForumModerateEvent	To setRender for UIForumModeratorPortlet.	
ForumRuleEvent	To setRender for UIForumRulePortlet.	
QuickReplyEvent	To setRender for UIForumQuickReplyPortlet.	

2.1.1.4.1. ForumLinkEvent

This event is fired through UIForumLinkPortlet.

To receive ForumLinkEvent, you must use the *ForumParameter* class with two properties:

Name	Type	Possible value	Description	
isRenderForumLink	boolean	true/false	If the value is set to true or false, the Forum link is rendered or not respectively.	
path	string	Absolute path of the class node (including types: category, forum, topic) defined by JCR	To set data for the UIForumLinkPortlet.	

- **Example:**

```

PortletRequestContext pcontext = (PortletRequestContext) WebuiRequestContext.getCurrentInstance();
ActionResponse actionRes = (ActionResponse) pcontext.getResponse();
ForumParameter param = new ForumParameter();
String path = forum.getPath();
if ( ...condition to render the UIForumLinkPortlet... ) {
    param.setRenderForumLink(true);
    param.setPath(path);
} else {
    param.setRenderForumLink(false);
}
actionRes.setEvent(new QName("ForumLinkEvent"), param) ;

```

2.1.1.4.2. ReLoadPortletEvent

This event is fired through UIForumPortlet.

To receive ReLoadPortletEvent, you must use the *ForumParameter* class with two properties:

Name	Type	Possible value	Description	
topicId	string	id of topic	To return id of topic for UIForumPortlet	
isRenderPoll	boolean	true/false	If the value is set to true or false, the <i>UITopicPoll</i> component is rendered or not respectively.	

- **Example:**

```
....
ActionResponse actionRes = pcontext.getResponse() ;
ForumParameter param = new ForumParameter() ;
param.setRenderPoll(true);
param.setTopicId(topic.get());
actionRes.setEvent(new QName("ReLoadPortletEvent"), param) ;
```

2.1.1.4.3. OpenLink

This event is fired through UIForumPortlet.

To receive OpenLink, you must use the *ForumParameter* class with one property:

Name	Type	Possible value	Description	
path	string	Absolute path of the node defined by JCR	To set data for the UIForumPortlet.	

- **Example:**

```
....
ActionResponse actionRes = pcontext.getResponse() ;
ForumParameter param = new ForumParameter() ;
param.setPath(path);
actionRes.setEvent(new QName("OpenLink"), param) ;
```

2.1.1.4.4. ForumPollEvent

This event is fired through UIForumPollPortlet.

To receive `ForumPollEvent`, you must use the *ForumParameter* class with four properties:

Name	Type	Possible value	Description
isRenderPoll	boolean	true/false	If the value is set to true or false, the <i>UIForumPollPortlet</i> portlet is rendered or not respectively.
categoryId	string	id of category	To return id of category for <i>UIForumPollPortlet</i>
forumId	string	id of forum	To return id of forum for <i>UIForumPollPortlet</i>
topicId	string	id of topic	To return id of topic for <i>UIForumPollPortlet</i>

- **Example:**

```
....
ActionResponse actionRes = pcontext.getResponse() ;
ForumParameter param = new ForumParameter() ;
param.setCategoryId(categoryId) ;
param.setForumId(forumId);
param.setTopicId(topicId);
param.setRenderPoll(topic.getIsPoll());
actionRes.setEvent(new QName("ForumPollEvent"), param);
```

2.1.1.4.5. ForumModerateEvent

This event is fired through *UIForumModeratePortlet*.

To receive `ForumModerateEvent`, you must use the *ForumParameter* class with two properties:

Name	Type	Possible value	Description
isRenderModerator	boolean	true/false	If the value is set to true or false, the <i>UIForumModeratePortlet</i> portlet is rendered or not respectively.
moderator	list of strings	list of user name	To set data for <i>UIForumModeratePortlet</i> .

- **Example:**

```
....
```



```

List<String> moderators = Arrays.asList(forum.getModerators());
ActionResponse actionRes = pcontext.getResponse() ;
ForumParameter param = new ForumParameter() ;
param.setModerators(moderators);
param.setRenderModerator(true);
actionRes.setEvent(new QName("ForumPollEvent"), param);

```

2.1.1.4.6. ForumRuleEvent

This event is fired through UIForumRulePortlet.

To receive ForumRuleEvent, you must use the *ForumParameter* class with two properties:

Name	Type	Possible value	Description
isRenderRule	boolean	true/false	If the value is set to true or false, the <i>UIForumRulePortlet</i> portlet is rendered or not respectively.
infoRules	list of strings	list of status: can create topic, can add post and topic has lock	To set permissions for users in UIForumRulePortlet.

• Example:

```

....
ActionResponse actionRes = pcontext.getResponse() ;
ForumParameter param = new ForumParameter() ;
List<String> list = param.getInfoRules();
if(forum.getIsClosed() || forum.getIsLock()) {
    list.set(0, "true");
}
else {
    list.set(0, "false");
}
list.set(1, String.valueOf(canCreateTopic));
list.set(2, String.valueOf(isCanPost));
param.setInfoRules(list);
param.setRenderRule(true);
actionRes.setEvent(new QName("ForumRuleEvent"), param) ;

```

2.1.1.4.7. QuickReplyEvent

This event is fired through UIQuickReplyPortlet.

To receive QuickReplyEvent, you must use the *ForumParameter* class with five properties:

Name	Type	Possible value	Description	
isRenderQuickReply	boolean	true/false	If the value is set to true or false, the <i>UIQuickReplyPortlet</i> portlet is rendered or not respectively.	
isModerator	boolean	true/false	To specify if the	

Name	Type	Possible value	Description	
			user is moderator of forum containing the topic with quick reply or not.	
categoryId	string	id of category	To return id of category for UIQuickReplyPortlet.	
forumId	string	id of forum	To return id of forum for UIQuickReplyPortlet.	
topicId	string	id of topic	To return id of topic for UIQuickReplyPortlet.	

- **Example:**

```

....
ActionResponse actionRes = pcontext.getResponse() ;
ForumParameter param = new ForumParameter() ;
param.setRenderQuickReply(isCanPost);
param.setModerator(isMod);
param.setCategoryId(categoryId) ;
param.setForumId(forumId);
param.setTopicId(topicId);
actionRes.setEvent(new QName("QuickReplyEvent"), param) ;;

```

2.1.2. Answers Portlet

2.1.2.1. Overview

Portlet name	AnswersPortlet
War name	faq.war
Description	The Answers portlet is the application to create answers, to reply and manage questions.

2.1.2.2. Portlet Preferences

The Answers portlet consists of preferences as follows:

Preference name	Possible value	Default value	Description
enableViewAvatar	true, false	true	To enable users to view the avatar of owner posting the question.
enableAutomaticRSS	true, false	true	To enable users to get

Preference name	Possible value	Default value	Description
			RSS automatically.
enableVotesAndComments	true, false	true	To enable users to give votes and comments for the question.
enableAnonymousSubmitQuestions	true, false	true	To enable anonymous users to submit questions.
display	approved, both	both	To enable administrators to view unapproved questions in the questions list in UIQuestions.
SendMailAddNewQuestion	string	empty	To display the content of sent email when a new question is added.
SendMailEditResponseQuestion	string	empty	To display the content of email when a response is edited.
emailMoveQuestion	string	empty	To display the content of email when a question is moved.
orderBy	alphabet, created	alphabet	To arrange questions in the alphabet or created date order.
orderType	asc, desc	asc	To display questions in the ascending or descending order.
isDiscussForum	true, false	false	To enable the DiscussQuestions function.
idNameCategoryForum	CategoryName, ForumName	empty	To select categories and forums for the DiscussionQuestions function.
uploadFileSizeLimitMB	integer	20	To set the maximum size of uploaded file.

2.1.2.3. Portlet.xml

- See the portlet.xml file in the project following this path: /webapps/faq/WEB-INF/portlet.xml

2.1.3. FAQ Portlet

2.1.3.1. Overview

Portlet name	FAQPortlet
War name	faq.war
Description	The FAQ portlet is the application to show questions and answers.

2.1.3.2. Portlet Preferences

FAQ portlet includes some portlet preferences that you can configure to alter the behavior.

At runtime, you can use the EDIT mode portlet to set the preferences:

Alternatively, you can configure the portlet in the *portlet-preferences.xml* file.

Preference name	Possible value	Default value	Description
useAjax	true, false	false	To specify if the ajax load or href load is used.

2.1.3.3. Portlet.xml

- See the portlet.xml file in the project following this path: /webapps/faq/WEB-INF/portlet.xml

2.1.4. Polls Portlet

2.1.4.1. Overview

Portlet name	PollPortlet
War name	poll.war
Description	The Polls portlet is the application for users to vote any idea, or activity.

2.1.4.2. Portlet Preferences

Preference name	Possible value	Default value	Description
pollIdShow	string	empty	The id of poll is displayed in the Polls portlet.

2.1.4.3. Portlet.xml

- See the portlet.xml file in the project following this path: poll/WEB-INF/portlet.xml.

```
<portlet-preferences>
  <preference>
    <name>pollIdShow</name>
    <value/> <!-- PollId -->
    <read-only>false</read-only>
  </preference>
</portlet-preferences>
```

2.2. Gadgets

2.2.1. Overview

Gadget name	pollslist
War name	poll.war
Description	The list of polls.

2.2.2. Preferences

Preference name	Description	
pollId	The id of poll which is displayed in the Polls gadget.	

2.2.3. Links to used REST services

- portal/rest/private/ks/poll/viewpoll/pollId
- portal/rest/private/ks/poll/votepoll/pollId/indexVote

Chapter 3. Configuration

3.1. Components

3.1.1. Components of eXo Knowledge

Key	Data type	Description
<code>org.exoplatform.ks.common.jcr.KSDataLocation</code>	<code>org.exoplatform.ks.common.jcr.KSDataLocation</code>	The location of the JCR storage location for KS data.
<code>org.exoplatform.services.scheduler.JobSchedulerService</code>	<code>org.exoplatform.services.scheduler.impl.JobSchedulerServiceImpl</code>	The Job Scheduler Service impl given number of times during a given period. It is used to monitor jobs automatically and continuously, to schedule event-driven job and report, and to control performance.

- Init-params of `org.exoplatform.ks.common.jcr.KSDataLocation`

Name	Possible value	Default value
<code>repository</code>	string	repository
<code>workspace</code>	string	knowledge

3.1.2. Components of Forum

Key	Data type	Description
<code>org.exoplatform.ks.bbcode.api.BBCodeService</code>	<code>org.exoplatform.ks.bbcode.core.BBCodeServiceImpl</code>	The BBCodeService impl GRUD operations on BBcodes.
<code>org.exoplatform.forum.service.DataStorage</code>	<code>org.exoplatform.forum.service.impl.JCRDataStorageImpl</code>	The DataStorage of Forum via the JCR system.
<code>org.exoplatform.forum.service.ForumService</code>	<code>org.exoplatform.forum.service.impl.ForumServiceImpl</code>	The ForumService impl public APIs to interact with the UI component and database.
<code>org.exoplatform.forum.service.ForumStatisticsService</code>	<code>org.exoplatform.forum.service.impl.ForumStatisticsServiceImpl</code>	The ForumStatisticsService impl APIs to interact with the database of Statistics system.

3.1.3. Components of Answers

Key	Data type	Description
org.exoplatform.faq.service.FAQService	org.exoplatform.faq.service.impl.FAQServiceImpl	ServiceImpl all public APIs to interact with the UI component and database.
org.exoplatform.faq.service.DataStorage	org.exoplatform.faq.service.impl.JCRDataStorage	DataStorage of FAQ via the JCR system.

3.1.4. Components of Polls

Key	Data type	Description
org.exoplatform.poll.service.DataStorage	org.exoplatform.poll.service.impl.JCRDataStorage	DataStorage all public APIs to interact with the UI component and database.
org.exoplatform.poll.service.PollService	org.exoplatform.poll.service.impl.PollServiceImpl	ServiceImpl of Polls via the JCR system.

3.2. External-component-plugin

3.2.1. Init data configuration

3.2.1.1. Init data

Application	Component	Description
Forum	KSDataLocation, ForumServiceImpl	To initialize default data of the Forum portlet.
Answers	KSDataLocation, AnswerServiceImpl	To initialize default data of the Answers portlet.
Poll	KSDataLocation, PollServiceImpl	To initialize default data of the Poll portlet.

The Init data plug-in is used to define the default data in the .xml file. It includes nodes (node of jcr).

When the component *org.exoplatform.services.jcr.config.RepositoryServiceConfiguration* is initialized, the component *org.exoplatform.services.jcr.impl.config.RepositoryServiceConfigurationPlugin* will be get and the function *addConfig* is called. Then, the */ks-extension/jcr/repository-configuration.xml* file is loaded and the component *org.exoplatform.ks.common.jcr.KSDataLocation* will be initialized. Once the component *org.exoplatform.ks.common.jcr.KSDataLocation* has been initialized, the *setLocation* function is called that will set up the workspace and repository for KS. After that, the *addPlugin* function will be run, generating the DataLocation (some parent nodes) for KS.

3.2.1.2. Configuration

3.2.1.2.1. Initialize conf-part for loading repository-configuration.xml.

In details:

When the server starts, the *jcr-configuration.xml* file is initialized. The component-plugin named addConfig will be referred to *org.exoplatform.services.jcr.impl.config.RepositoryServiceConfigurationPlugin* to load the *war:/ks-extension/jcr/repository-configuration.xml* file.

```
<component-plugin>
  <!-- The name of the plugin -->
  <name>Sample RepositoryServiceConfiguration Plugin</name>
  <!-- The name of the method to call on the RepositoryServiceConfiguration in order to add the RepositoryServiceConfiguration -->
  <set-method>addConfig</set-method>
  <!-- The full qualified name of the RepositoryServiceConfigurationPlugin -->
  <type>org.exoplatform.services.jcr.impl.config.RepositoryServiceConfigurationPlugin</type>
  <init-params>
    <value-param>
      <name>conf-path</name>
      <description>JCR configuration file</description>
      <value>war:/ks-extension/jcr/repository-configuration.xml</value>
    </value-param>
  </init-params>
</component-plugin>
```

- In which:

Name	Set-method	Type	Description	
RepositoryServiceConfigurationPlugin	addConfig	org.exoplatform.services.jcr.impl.config.RepositoryServiceConfigurationPlugin	To jcr.impl.config.RepositoryServiceConfigurationPlugin configuration of JCR data to initialize data.	

- Init-params

Name	Possible value	Default value	Description
conf-path	string	war:/ks-extension/jcr/repository-configuration.xml	The path to the repository-configuration.xml file.

3.2.1.2.2. Initialize workspace name and repository name in the *storage-configuration.xml* file.

In details:

After the *war:/ks-extension/jcr/repository-configuration.xml* file is initialized, the server will load the *storage-configuration.xml* file, and the *setLocation* function in the *org.exoplatform.ks.common.conf.DataLocationPlugin* component will be run. The workspace name and repository name will be initialized.

```
<external-component-plugins>
  <target-component>org.exoplatform.ks.common.jcr.KSDataLocation</target-component>
  <component-plugin>
    <name>ks.data.location</name>
```



```

<set-method>setLocation</set-method>
<type>org.exoplatform.ks.common.conf.DataLocationPlugin</type>
<init-params>
  <value-param>
    <name>repository</name>
    <description>JCR repository for KS data</description>
    <value>repository</value>
  </value-param>
  <value-param>
    <name>workspace</name>
    <description>workspace for KS data</description>
    <value>knowledge</value>
  </value-param>
</init-params>
</component-plugin>
</external-component-plugins>

```

In which,

Value-param	Possible value	Default value	Description
repository	string	repository	The JCR repository for KS data.
workspace	string	knowledge	The workspace for KS data.

3.2.1.2.3. Initialize data

Once the workspace name and repository name are registered, the server will load `org.exoplatform.services.jcr.ext.hierarchy.NodeHierarchyCreator` and the `addPaths` function in `org.exoplatform.services.jcr.ext.hierarchy.impl.AddPathPlugin` is called. Then, the data location will be built.

```

<component-plugin>
  <name>addPaths</name>
  <set-method>addPlugin</set-method>
  <type>org.exoplatform.services.jcr.ext.hierarchy.impl.AddPathPlugin</type>
  <init-params>
    <object-param>
      <name>ks.storage</name>
      <description>ks data storage tree</description>
      <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig">
        <field name="repository"><string>repository</string></field>
        <field name="workspaces">
          <collection type="java.util.ArrayList">
            <value><string>knowledge</string></value>
          </collection>
        </field>
        <field name="jcrPaths">
          <collection type="java.util.ArrayList">
            <value>
              <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
                <field name="alias"><string>eXoApplications</string></field>
                <field name="path"><string>/exo:applications</string></field>
                <field name="permissions">
                  <collection type="java.util.ArrayList">
                    <value>
                      <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissi
                        <field name="identity"><string>*:/platform/administrators</string></field>
                        <field name="read"><string>true</string></field>
                        <field name="addNode"><string>true</string></field>
                        <field name="setProperty"><string>true</string></field>
                        <field name="remove"><string>true</string></field>
                      </object>
                    </value>
                  </collection>
                </field>
              </object>
            </value>
          </collection>
        </field>
      </object>
    </value>
  </init-params>
</component-plugin>

```

```

<value>
  <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
    <field name="alias"><string>ksUserAvatar</string></field>
    <field name="path"><string>/exo:applications/ksUserAvatar</string></field>
    <field name="nodeType"><string>nt:unstructured</string></field>
    <field name="permissions">
      <collection type="java.util.ArrayList">
        <value>
          <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissions">
            <field name="identity"><string>*:/platform/administrators</string></field>
            <field name="read"><string>>true</string></field>
            <field name="addNode"><string>>true</string></field>
            <field name="setProperty"><string>>true</string></field>
            <field name="remove"><string>>true</string></field>
          </object>
        </value>
      </collection>
    </field>
  </object>
</value>

<value>
  <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
    <field name="alias"><string>ForumService</string></field>
    <field name="path"><string>/exo:applications/ForumService</string></field>
    <field name="nodeType"><string>exo:forumHome</string></field>
    <field name="permissions">
      <collection type="java.util.ArrayList">
        <value>
          <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissions">
            <field name="identity"><string>*:/platform/administrators</string></field>
            <field name="read"><string>>true</string></field>
            <field name="addNode"><string>>true</string></field>
            <field name="setProperty"><string>>true</string></field>
            <field name="remove"><string>>true</string></field>
          </object>
        </value>
      </collection>
    </field>
  </object>
</value>

<value>
  <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
    <field name="alias"><string>ForumSystem</string></field>
    <field name="path"><string>/exo:applications/ForumService/ForumSystem</string></field>
    <field name="nodeType"><string>exo:forumSystem</string></field>
    <field name="permissions">
      <collection type="java.util.ArrayList">
        <value>
          <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissions">
            <field name="identity"><string>*:/platform/administrators</string></field>
            <field name="read"><string>>true</string></field>
            <field name="addNode"><string>>true</string></field>
            <field name="setProperty"><string>>true</string></field>
            <field name="remove"><string>>true</string></field>
          </object>
        </value>
      </collection>
    </field>
  </object>
</value>

<value>
  <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
    <field name="alias"><string>UserProfileHome</string></field>
    <field name="path"><string>/exo:applications/ForumService/ForumSystem/UserProfileHome</string></field>
    <field name="nodeType"><string>exo:userProfileHome</string></field>
    <field name="permissions">
      <collection type="java.util.ArrayList">
        <value>
          <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissions">
            <field name="identity"><string>*:/platform/administrators</string></field>
            <field name="read"><string>>true</string></field>
            <field name="addNode"><string>>true</string></field>
            <field name="setProperty"><string>>true</string></field>
            <field name="remove"><string>>true</string></field>
          </object>
        </value>
      </collection>
    </field>
  </object>
</value>

```

```

        </value>
    </collection>
</field>
</object>
</value>

<value>
    <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
        <field name="alias"><string>StatisticHome</string></field>
        <field name="path"><string>/exo:applications/ForumService/ForumSystem/StatisticHome</string></field>
        <field name="nodeType"><string>exo:statisticHome</string></field>
        <field name="permissions">
            <collection type="java.util.ArrayList">
                <value>
                    <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissions">
                        <field name="identity"><string>*:/platform/administrators</string></field>
                        <field name="read"><string>true</string></field>
                        <field name="addNode"><string>true</string></field>
                        <field name="setProperty"><string>true</string></field>
                        <field name="remove"><string>true</string></field>
                    </object>
                </value>
            </collection>
        </field>
    </object>
</value>

<value>
    <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
        <field name="alias"><string>forumStatistic</string></field>
        <field name="path"><string>/exo:applications/ForumService/ForumSystem/StatisticHome/forumStatisticHome</string></field>
        <field name="nodeType"><string>exo:forumStatistic</string></field>
        <field name="permissions">
            <collection type="java.util.ArrayList">
                <value>
                    <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissions">
                        <field name="identity"><string>*:/platform/administrators</string></field>
                        <field name="read"><string>true</string></field>
                        <field name="addNode"><string>true</string></field>
                        <field name="setProperty"><string>true</string></field>
                        <field name="remove"><string>true</string></field>
                    </object>
                </value>
            </collection>
        </field>
    </object>
</value>

<value>
    <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
        <field name="alias"><string>AdministrationHome</string></field>
        <field name="path"><string>/exo:applications/ForumService/ForumSystem/AdministrationHome</string></field>
        <field name="nodeType"><string>exo:administrationHome</string></field>
        <field name="permissions">
            <collection type="java.util.ArrayList">
                <value>
                    <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissions">
                        <field name="identity"><string>*:/platform/administrators</string></field>
                        <field name="read"><string>true</string></field>
                        <field name="addNode"><string>true</string></field>
                        <field name="setProperty"><string>true</string></field>
                        <field name="remove"><string>true</string></field>
                    </object>
                </value>
            </collection>
        </field>
    </object>
</value>

<value>
    <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
        <field name="alias"><string>BanIPHome</string></field>
        <field name="path"><string>/exo:applications/ForumService/ForumSystem/BanIPHome</string></field>
        <field name="nodeType"><string>exo:banIPHome</string></field>
        <field name="permissions">
            <collection type="java.util.ArrayList">
                <value>
                    <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissions">
                        <field name="identity"><string>*:/platform/administrators</string></field>

```

```

        <field name="read"><string>true</string></field>
        <field name="addNode"><string>true</string></field>
        <field name="setProperty"><string>true</string></field>
        <field name="remove"><string>true</string></field>
    </object>
</value>
</collection>
</field>
</object>
</value>

<value>
    <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
        <field name="alias"><string>forumBanIP</string></field>
        <field name="path"><string>/exo:applications/ForumService/ForumSystem/BanIPHome/ForumBanIP</string></field>
        <field name="nodeType"><string>exo:banIP</string></field>
        <field name="permissions">
            <collection type="java.util.ArrayList">
                <value>
                    <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissions">
                        <field name="identity"><string>*:/platform/administrators</string></field>
                        <field name="read"><string>true</string></field>
                        <field name="addNode"><string>true</string></field>
                        <field name="setProperty"><string>true</string></field>
                        <field name="remove"><string>true</string></field>
                    </object>
                </value>
            </collection>
        </field>
    </object>
</value>

<value>
    <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
        <field name="alias"><string>ForumData</string></field>
        <field name="path"><string>/exo:applications/ForumService/ForumData</string></field>
        <field name="nodeType"><string>exo:forumData</string></field>
        <field name="permissions">
            <collection type="java.util.ArrayList">
                <value>
                    <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissions">
                        <field name="identity"><string>*:/platform/administrators</string></field>
                        <field name="read"><string>true</string></field>
                        <field name="addNode"><string>true</string></field>
                        <field name="setProperty"><string>true</string></field>
                        <field name="remove"><string>true</string></field>
                    </object>
                </value>
            </collection>
        </field>
    </object>
</value>

<value>
    <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
        <field name="alias"><string>TopicTypeHome</string></field>
        <field name="path"><string>/exo:applications/ForumService/ForumData/TopicTypeHome</string></field>
        <field name="nodeType"><string>exo:topicTypeHome</string></field>
        <field name="permissions">
            <collection type="java.util.ArrayList">
                <value>
                    <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissions">
                        <field name="identity"><string>*:/platform/administrators</string></field>
                        <field name="read"><string>true</string></field>
                        <field name="addNode"><string>true</string></field>
                        <field name="setProperty"><string>true</string></field>
                        <field name="remove"><string>true</string></field>
                    </object>
                </value>
            </collection>
        </field>
    </object>
</value>

<value>
    <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
        <field name="alias"><string>CategoryHome</string></field>
        <field name="path"><string>/exo:applications/ForumService/ForumData/CategoryHome</string></field>
    </object>
</value>

```

```

<field name="nodeType"><string>exo:categoryHome</string></field>
<field name="permissions">
  <collection type="java.util.ArrayList">
    <value>
      <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissions">
        <field name="identity"><string>*:/platform/administrators</string></field>
        <field name="read"><string>true</string></field>
        <field name="addNode"><string>true</string></field>
        <field name="setProperty"><string>true</string></field>
        <field name="remove"><string>true</string></field>
      </object>
    </value>
  </collection>
</field>
</object>
</value>

<value>
  <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
    <field name="alias"><string>TagHome</string></field>
    <field name="path"><string>/exo:applications/ForumService/ForumData/TagHome</string></field>
    <field name="nodeType"><string>exo:tagHome</string></field>
    <field name="permissions">
      <collection type="java.util.ArrayList">
        <value>
          <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissions">
            <field name="identity"><string>*:/platform/administrators</string></field>
            <field name="read"><string>true</string></field>
            <field name="addNode"><string>true</string></field>
            <field name="setProperty"><string>true</string></field>
            <field name="remove"><string>true</string></field>
          </object>
        </value>
      </collection>
    </field>
  </object>
</value>

<value>
  <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
    <field name="alias"><string>forumBBCode</string></field>
    <field name="path"><string>/exo:applications/ForumService/ForumData/forumBBCode</string></field>
    <field name="nodeType"><string>exo:forumBBCodeHome</string></field>
    <field name="permissions">
      <collection type="java.util.ArrayList">
        <value>
          <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissions">
            <field name="identity"><string>*:/platform/administrators</string></field>
            <field name="read"><string>true</string></field>
            <field name="addNode"><string>true</string></field>
            <field name="setProperty"><string>true</string></field>
            <field name="remove"><string>true</string></field>
          </object>
        </value>
      </collection>
    </field>
  </object>
</value>

<value>
  <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
    <field name="alias"><string>faqApp</string></field>
    <field name="path"><string>/exo:applications/faqApp</string></field>
    <field name="nodeType"><string>exo:faqHome</string></field>
    <field name="permissions">
      <collection type="java.util.ArrayList">
        <value>
          <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissions">
            <field name="identity"><string>*:/platform/administrators</string></field>
            <field name="read"><string>true</string></field>
            <field name="addNode"><string>true</string></field>
            <field name="setProperty"><string>true</string></field>
            <field name="remove"><string>true</string></field>
          </object>
        </value>
      </collection>
    </field>
  </object>
</value>

```

```

    </field>
  </object>
</value>

<value>
  <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
    <field name="alias"><string>settingHome</string></field>
    <field name="path"><string>/exo:applications/faqApp/settingHome</string></field>
    <field name="nodeType"><string>exo:faqSettingHome</string></field>
    <field name="permissions">
      <collection type="java.util.ArrayList">
        <value>
          <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissi
            <field name="identity"><string>*:/platform/administrators</string></field>
            <field name="read"><string>true</string></field>
            <field name="addNode"><string>true</string></field>
            <field name="setProperty"><string>true</string></field>
            <field name="remove"><string>true</string></field>
          </object>
        </value>
      </collection>
    </field>
  </object>
</value>
<value>
  <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
    <field name="alias"><string>userSettingHome</string></field>
    <field name="path"><string>/exo:applications/faqApp/settingHome/userSettingHome</string></field>
    <field name="nodeType"><string>exo:faqUserSettingHome</string></field>
    <field name="permissions">
      <collection type="java.util.ArrayList">
        <value>
          <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissi
            <field name="identity"><string>*:/platform/administrators</string></field>
            <field name="read"><string>true</string></field>
            <field name="addNode"><string>true</string></field>
            <field name="setProperty"><string>true</string></field>
            <field name="remove"><string>true</string></field>
          </object>
        </value>
      </collection>
    </field>
  </object>
</value>

  <value>
    <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
      <field name="alias"><string>categories</string></field>
      <field name="path"><string>/exo:applications/faqApp/categories</string></field>
      <field name="nodeType"><string>exo:faqCategory</string></field>
      <field name="mixinTypes">
        <collection type="java.util.ArrayList">
          <value><string>mix:faqSubCategory</string></value>
        </collection>
      </field>
      <field name="permissions">
        <collection type="java.util.ArrayList">
          <value>
            <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissi
              <field name="identity"><string>*:/platform/administrators</string></field>
              <field name="read"><string>true</string></field>
              <field name="addNode"><string>true</string></field>
              <field name="setProperty"><string>true</string></field>
              <field name="remove"><string>true</string></field>
            </object>
          </value>
        </collection>
      </field>
    </object>
  </value>

  <value>
    <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
      <field name="alias"><string>templateHome</string></field>
      <field name="path"><string>/exo:applications/faqApp/templateHome</string></field>
      <field name="nodeType"><string>exo:templateHome</string></field>
      <field name="permissions">
        <collection type="java.util.ArrayList">

```



```

        <value>
          <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissions">
            <field name="identity"><string>*:/platform/administrators</string></field>
            <field name="read"><string>true</string></field>
            <field name="addNode"><string>true</string></field>
            <field name="setProperty"><string>true</string></field>
            <field name="remove"><string>true</string></field>
          </object>
        </value>
      </collection>
    </field>
  </object>
</value>

<value>
  <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
    <field name="alias"><string>eXoPolls</string></field>
    <field name="path"><string>/exo:applications/eXoPolls</string></field>
    <field name="nodeType"><string>nt:unstructured</string></field>
    <field name="permissions">
      <collection type="java.util.ArrayList">
        <value>
          <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissions">
            <field name="identity"><string>*:/platform/administrators</string></field>
            <field name="read"><string>true</string></field>
            <field name="addNode"><string>true</string></field>
            <field name="setProperty"><string>true</string></field>
            <field name="remove"><string>true</string></field>
          </object>
        </value>
      </collection>
    </field>
  </object>
</value>

<value>
  <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$JcrPath">
    <field name="alias"><string>groupsPath</string></field>
    <field name="path"><string>/Groups</string></field>
    <field name="permissions">
      <collection type="java.util.ArrayList">
        <value>
          <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissions">
            <field name="identity"><string>*:/platform/administrators</string></field>
            <field name="read"><string>true</string></field>
            <field name="addNode"><string>true</string></field>
            <field name="setProperty"><string>true</string></field>
            <field name="remove"><string>true</string></field>
          </object>
        </value>
        <value>
          <object type="org.exoplatform.services.jcr.ext.hierarchy.impl.HierarchyConfig$Permissions">
            <field name="identity"><string>any</string></field>
            <field name="read"><string>true</string></field>
            <field name="addNode"><string>false</string></field>
            <field name="setProperty"><string>true</string></field>
            <field name="remove"><string>false</string></field>
          </object>
        </value>
      </collection>
    </field>
  </object>
</value>
</collection>
</field>
</object-param>
</init-params>
</component-plugin>

```

3.2.2. Roles Configuration

3.2.2.1. Overview

The roles plug-in component defines roles in eXo Platform 3 Knowledge Forum. The roles plug-in is a convenient application to define access to a set of functions within the application. Currently, it only defines the person who has the *administrator* role. Administrators can get access to administration functions. At the runtime, the application gets data from the roles plug-in to decide whether the logged user has the administrative role or not.

3.2.2.2. Configuration

The plug-in is configured in the *roles-configuration.xml* file.

When the user signs in, his or her username, group and membership will be compared with the user roles defined in the *.xml* file that is provided by the roles plug-in component.

In details:

At runtime of ForumService, the roles plug-in component is called. The role plug-in is configured in the *roles-configuration.xml* file. The plug-in component named *add.role.rules.plugin* will be referred to *org.exoplatform.ks.common.conf.RoleRulesPlugin* to create users for Forum corresponding to users who exist in the organization database. In addition, the list of users who have administration roles are also defined.

```
<component-plugin>
  <name>add.role.rules.plugin</name>
  <set-method>addRolePlugin</set-method>
  <type>org.exoplatform.ks.common.conf.RoleRulesPlugin</type>
  <description>add role rules</description>
  <init-params>
    <value-param>
      <name>role</name>
      <description>name of the role</description>
      <value>ADMIN</value>
    </value-param>
    <values-param>
      <name>rules</name>
      <description>rules of the role</description>
      <value>root</value>
      <!--value>admin</value -->
      <!--value>member:/demo</value-->
      <!--value>/forums/admin</value-->
      <!--value>*/forum/admin</value-->
      <!--value>/platform/administrators</value-->
      <!--value>manager:/platform/users</value-->
      <!--value>*/somegroup/somesubgroup</value-->
      <!--value>manager:/somegroup/someothergroup</value-->
    </values-param>
  </init-params>
</component-plugin>
```

Name	Set-method	Type	Description
add.role.rules.plugin	addRolePlugin	org.exoplatform.ks.common.conf.RoleRulesPlugin	To add Role Rules

- Init-params:

Name	Possible value	Default value	Description
role	string	ADMIN	The name of role
rules	string	root	The rules of role

- When the *role-configuration.xml* file is executed, the administration role (with ADMIN value) will be checked and assigned to a matrix of users/groups/memberships defined inside "value" tags as below:

```
<value>...</value>
```

For example:

```
...
    <value>root</value>
    <value>john</value>
    <value>/platform/administrators</value>
    <value>member:/VIP</value>
    <value>validator:/VIP</value>
...
```

In the example above, the default administrators of Forum include *root*, *john*, users in */platform/administrators* group and users who are *member/validator* memberships in the VIP group.

When *root*, *john* or any user who belongs to the */platform/administrators* group or users who have *member/validator* memberships in the VIP group signs in a Forum, he or she will be identified as the default administrator of Forum.

To add or remove the default administrator of Forum, simply edit the *roles-configuration.xml* file, add or remove the relevant "value" tags.

```
...
    <values-param>
        ...
    <value>...</value>
        ...
    </values-param>
...
```

The default administrators of Forum can only change their roles by editing the *roles-configuration.xml* file.

At runtime, modifications in the *roles-configuration.xml* file will be read and database will be updated. Normal users of Forum and default administration will be created correspondingly.

3.2.3. Forum Configuration

3.2.3.1. BBCode Configuration

3.2.3.1.1. Overview

The BBCode plug-in component defines default BBCode data in the *.xml* file, including BBCode tags, for example, I, B, U, SIZE, COLOR.

When the BBCode Service runs, it will get values returned from the BBCode plug-in component to initialize default BBCode data.

3.2.3.1.2. Configuration

3.2.3.1.2.1. Default BBCode data

The default BBCode data is configured in the *bbcodes-configuration.xml* file.

In particular, at runtime of BBCode Service, the BBCode plug-in component is called. Then, the *bbcodes-configuration.xml* file is executed, and the component-plugin named *registerBBCodePlugin* will be referred to *org.exoplatform.ks.bbcode.spi.BBCodePlugin* to execute some objects that will generate default data.

```
<component-plugin>
  <name>forum.default.bbcodes</name>
  <set-method>registerBBCodePlugin</set-method>
  <type>org.exoplatform.ks.bbcode.spi.BBCodePlugin</type>
  <description>default supported BBCodes</description>
  <init-params>
    <object-param>
      <name>I</name>
      <description>set text in italic</description>
      <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
        <field name="tagName">
          <string>I</string>
        </field>
        <field name="replacement">
          <string>&lt;i&gt;{param}&lt;/i&gt;</string>
        </field>
        <field name="description">
          <string>Set text in italic</string>
        </field>
        <field name="example">
          <string>[I]This text is italic[/I]</string>
        </field>
        <field name="isOption">
          <string>>false</string>
        </field>
        <field name="isActive">
          <string>>true</string>
        </field>
      </object>
    </object-param>

    <object-param>
      <name>B</name>
      <description/>
      <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
        <field name="tagName">
          <string>B</string>
        </field>
        <field name="replacement">
          <string>&lt;b&gt;{param}&lt;/b&gt;</string>
        </field>
        <field name="description">
          <string>Set text in bold</string>
        </field>
        <field name="example">
          <string>[B]This text is bold[/B]</string>
        </field>
        <field name="isOption">
          <string>>false</string>
        </field>
        <field name="isActive">
          <string>>true</string>
        </field>
      </object>
    </object-param>

    <object-param>
      <name>U</name>
      <description/>

      <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
        <field name="tagName">
          <string>U</string>
        </field>
        <field name="replacement">
          <string>&lt;u&gt;{param}&lt;/u&gt;</string>
        </field>
      </object>
    </object-param>
  </init-params>
</component-plugin>
```

```

    <field name="description">
      <string>Set text in underline</string>
    </field>
    <field name="example">
      <string>[U]This text is underline[/U]</string>
    </field>
    <field name="isOption">
      <string>>false</string>
    </field>
    <field name="isActive">
      <string>>true</string>
    </field>
  </object>
</object-param>

<object-param>
  <name>COLOR</name>
  <description/>
  <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
    <field name="tagName">
      <string>COLOR</string>
    </field>
    <field name="replacement">
      <string>&lt;font color="{option}"&gt;{param}&lt;/font&gt;</string>
    </field>
    <field name="description">
      <string>The [color=option] tag allows you to change the color of your text.</string>
    </field>
    <field name="example">
      <string>[COLOR=blue]This text is blue[/COLOR]</string>
    </field>
    <field name="isOption">
      <string>>true</string>
    </field>
    <field name="isActive">
      <string>>true</string>
    </field>
  </object>
</object-param>

<object-param>
  <name>SIZE</name>
  <description/>
  <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
    <field name="tagName">
      <string>SIZE</string>
    </field>
    <field name="replacement">
      <string>&lt;font size="{option}"&gt;{param}&lt;/font&gt;</string>
    </field>
    <field name="description">
      <string>The [size=option] tag allows you to change the size of your text.</string>
    </field>
    <field name="example">
      <string>[size=+2]this text is two sizes larger than normal[/size]</string>
    </field>
    <field name="isOption">
      <string>>true</string>
    </field>
    <field name="isActive">
      <string>>true</string>
    </field>
  </object>
</object-param>

<object-param>
  <name>FONT</name>
  <description/>
  <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
    <field name="tagName">
      <string>FONT</string>
    </field>
    <field name="replacement">
      <string>&lt;font face="{option}"&gt;{param}&lt;/font&gt;</string>
    </field>
    <field name="description">
      <string>The [font=option] tag allows you to change the font of your text.</string>
    </field>
    <field name="example">

```

```

        <string>[font=courier]this text is in the courier font[/font]</string>
    </field>
    <field name="isOption">
        <string>true</string>
    </field>
    <field name="isActive">
        <string>true</string>
    </field>
</object>
</object-param>

<object-param>
    <name>HIGHLIGHT</name>
    <description/>
    <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
        <field name="tagName">
            <string>HIGHLIGHT</string>
        </field>
        <field name="replacement">
            <string>&lt;span style="font-weight: bold; color: blue;"&gt;{param}&lt;/span&gt;</string>
        </field>
        <field name="description">
            <string>The [highlight] tag allows you to make highlight of your text.</string>
        </field>
        <field name="example">
            <string>[highlight]this text is highlighted[/highlight]</string>
        </field>
        <field name="isOption">
            <string>>false</string>
        </field>
        <field name="isActive">
            <string>true</string>
        </field>
    </object>
</object-param>

<object-param>
    <name>LEFT</name>
    <description/>
    <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
        <field name="tagName">
            <string>LEFT</string>
        </field>
        <field name="replacement">
            <string>&lt;div align="left"&gt;{param}&lt;/div&gt;</string>
        </field>
        <field name="description">
            <string>The [left] tag allows alignment text to left. </string>
        </field>
        <field name="example">
            <string>[LEFT]This text is left-aligned[/LEFT]</string>
        </field>
        <field name="isOption">
            <string>>false</string>
        </field>
        <field name="isActive">
            <string>true</string>
        </field>
    </object>
</object-param>

<object-param>
    <name>RIGHT</name>
    <description/>
    <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
        <field name="tagName">
            <string>RIGHT</string>
        </field>
        <field name="replacement">
            <string>&lt;div align="right"&gt;{param}&lt;/div&gt;</string>
        </field>
        <field name="description">
            <string>The [right] tag allows alignment text to right.</string>
        </field>
        <field name="example">
            <string>[RIGHT]example[/RIGHT]</string>
        </field>
        <field name="isOption">
            <string>[RIGHT]this text is right-aligned[/RIGHT]</string>

```

```

    </field>
    <field name="isActive">
      <string>true</string>
    </field>
  </object>
</object-param>

<object-param>
  <name>CENTER</name>
  <description/>
  <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
    <field name="tagName">
      <string>CENTER</string>
    </field>
    <field name="replacement">
      <string>&lt;div align="center"&gt;{param}&lt;/div&gt;</string>
    </field>
    <field name="description">
      <string>The [center] allows alignment text to center.</string>
    </field>
    <field name="example">
      <string>[CENTER]this text is center-aligned[/CENTER]</string>
    </field>
    <field name="isOption">
      <string>>false</string>
    </field>
    <field name="isActive">
      <string>true</string>
    </field>
  </object>
</object-param>

<object-param>
  <name>JUSTIFY</name>
  <description/>
  <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
    <field name="tagName">
      <string>JUSTIFY</string>
    </field>
    <field name="replacement">
      <string>&lt;div align="justify"&gt;{param}&lt;/div&gt;</string>
    </field>
    <field name="description">
      <string>The [justify] tag allows alignment text to justify.</string>
    </field>
    <field name="example">
      <string>[JUSTIFY]this text is justify-aligned[/JUSTIFY]</string>
    </field>
    <field name="isOption">
      <string>>false</string>
    </field>
    <field name="isActive">
      <string>true</string>
    </field>
  </object>
</object-param>

<object-param>
  <name>EMAIL</name>
  <description/>
  <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
    <field name="tagName">
      <string>EMAIL</string>
    </field>
    <field name="replacement">
      <string>&lt;a href="mailto:{param}"&gt;{param}&lt;/a&gt;</string>
    </field>
    <field name="description">
      <string>The [email] tag allows you to link to an email address.</string>
    </field>
    <field name="example">
      <string>[email]demo@example.com[/email]</string>
    </field>
    <field name="isOption">
      <string>>false</string>
    </field>
    <field name="isActive">
      <string>true</string>
    </field>
  </object>

```

```

</object>
</object-param>

<object-param>
  <name>EMAIL-OPT</name>
  <description/>
  <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
    <field name="tagName">
      <string>EMAIL</string>
    </field>
    <field name="replacement">
      <string>&lt;a href="mailto:{option}"&gt;{param}&lt;/a&gt;</string>
    </field>
    <field name="description">
      <string>The [email=option] tag allows link to an email address and use an optional parameter to 'r
    </field>
    <field name="example">
      <string>[email=demo@example.com]Click Here to Email me[/email] </string>
    </field>
    <field name="isOption">
      <string>true</string>
    </field>
    <field name="isActive">
      <string>true</string>
    </field>
  </object>
</object-param>

<object-param>
  <name>URL</name>
  <description/>
  <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
    <field name="tagName">
      <string>URL</string>
    </field>
    <field name="replacement">
      <string>&lt;a target='_blank' href="{param}"&gt;{param}&lt;/a&gt;</string>
    </field>
    <field name="description">
      <string>The [url] tag allows link to other websites and files.</string>
    </field>
    <field name="example">
      <string>[URL]http://www.exoplatform.com[/URL]</string>
    </field>
    <field name="isOption">
      <string>>false</string>
    </field>
    <field name="isActive">
      <string>true</string>
    </field>
  </object>
</object-param>

<object-param>
  <name>URL-OPT</name>
  <description/>
  <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
    <field name="tagName">
      <string>URL</string>
    </field>
    <field name="replacement">
      <string>&lt;a target='_blank' href="{option}"&gt;{param}&lt;/a&gt;</string>
    </field>
    <field name="description">
      <string>The [url=option] tag allows link to other websites and files and usean optional parameter
    </field>
    <field name="example">
      <string>[URL=http://www.exoplatform.com]Click goto exoplatform website.[/URL]</string>
    </field>
    <field name="isOption">
      <string>true</string>
    </field>
    <field name="isActive">
      <string>true</string>
    </field>
  </object>
</object-param>

<object-param>

```

```

<name>GOTO</name>
<description/>
<object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
  <field name="tagName">
    <string>GOTO</string>
  </field>
  <field name="replacement">
    <string>&lt;a href="{option}"&gt;{param}&lt;/a></string>
  </field>
  <field name="description">
    <string>Allows goto directly to link instead of open a new window or a new tab. </string>
  </field>
  <field name="example">
    <string>[goto=http://www.exoplatform.com]Goto this link.[/goto]&gt;</string>
  </field>
  <field name="isOption">
    <string>true</string>
  </field>
  <field name="isActive">
    <string>true</string>
  </field>
</object>
</object-param>

<object-param>
  <name>LIST</name>
  <description/>
  <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
    <field name="tagName">
      <string>LIST</string>
    </field>
    <field name="replacement">
      <string>You can not define this bbcode tag. It is defined by the developer.</string>
    </field>
    <field name="description">
      <string>The [list] tag allows create simple, each bullet is denoted by the [*] tag.</string>
    </field>
    <field name="example">
      <string>[list][*]list item 1[*]list item 2[/list]</string>
    </field>
    <field name="isOption">
      <string>>false</string>
    </field>
    <field name="isActive">
      <string>true</string>
    </field>
  </object>
</object-param>

<object-param>
  <name>LIST-OPT</name>
  <description/>
  <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
    <field name="tagName">
      <string>LIST</string>
    </field>
    <field name="replacement">
      <string>You can not define this bbcode tag. It is defined by the developer.</string>
    </field>
    <field name="description">
      <string>The [list=option] tag allows create bulleted lists specifying an option. Within the value
    </field>
    <field name="example">
      <string>[list=1][*]list item 1[*]list item 2[/list]</string>
    </field>
    <field name="isOption">
      <string>true</string>
    </field>
    <field name="isActive">
      <string>true</string>
    </field>
  </object>
</object-param>

<object-param>
  <name>IMG</name>
  <description/>
  <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
    <field name="tagName">

```

```

        <string>IMG</string>
      </field>
      <field name="replacement">
        <string>&lt;img border="0" alt="" src="{param}" class="inlineimg"/&gt;</string>
      </field>
      <field name="description">
        <string>The [img] tag allows you to shows the image indicated by {url}</string>
      </field>
      <field name="example">
        <string>[url=http://www.google.com.vn] [img]http://groups.google.com.vn/groups/img/3nb/groups_medi
      </field>
      <field name="isOption">
        <string>>false</string>
      </field>
      <field name="isActive">
        <string>true</string>
      </field>
    </object>
  </object-param>

  <object-param>
    <name>QUOTE</name>
    <description/>
    <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
      <field name="tagName">
        <string>QUOTE</string>
      </field>
      <field name="replacement">
        <string>&lt;div style="background:#ededf7; border:1px solid #d8d8d8; padding:6px 6px 6px 15px; mar
      </field>
      <field name="description">
        <string>The [quote] tag allows attribute content of post.</string>
      </field>
      <field name="example">
        <string>[quote]Lorem ipsum dolor sit amet[/quote]</string>
      </field>
      <field name="isOption">
        <string>>false</string>
      </field>
      <field name="isActive">
        <string>true</string>
      </field>
    </object>
  </object-param>

  <object-param>
    <name>QUOTE-OPT</name>
    <description/>
    <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
      <field name="tagName">
        <string>QUOTE</string>
      </field>
      <field name="replacement">
        <string>&lt;div style="background:#ededf7; border:1px solid #d8d8d8; padding:6px 6px 6px 15px; mar
      </field>
      <field name="description">
        <string>The [quote=option] tag allows attribute content and user name of poster.</string>
      </field>
      <field name="example">
        <string>[quote=John Doe]Lorem ipsum dolor sit amet[/quote]</string>
      </field>
      <field name="isOption">
        <string>true</string>
      </field>
      <field name="isActive">
        <string>true</string>
      </field>
    </object>
  </object-param>

  <object-param>
    <name>CODE</name>
    <description/>
    <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
      <field name="tagName">
        <string>CODE</string>
      </field>
      <field name="replacement">
        <string>&lt;div style="background:#ededed; border:1px inset #7b7b7b; margin:5px; overflow:auto;"&g

```



```

    </field>
    <field name="description">
      <string>The [code] tag allows you to view source code html.</string>
    </field>
    <field name="example">
      <string>[code]&lt;div&gt;some text or code html&lt;/div&gt;[/code]</string>
    </field>
    <field name="isOption">
      <string>>false</string>
    </field>
    <field name="isActive">
      <string>>true</string>
    </field>
  </object>
</object-param>

<object-param>
  <name>CSS</name>
  <description/>
  <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
    <field name="tagName">
      <string>CSS</string>
    </field>
    <field name="replacement">
      <string>&lt;span class="{option}"&gt;{param}&lt;/span&gt;</string>
    </field>
    <field name="description">
      <string>The [css=option] tag allows you to add div tag and set class Name for this it.</string>
    </field>
    <field name="example">
      <string>[css=highlight]Text is highlight[/css]</string>
    </field>
    <field name="isOption">
      <string>true</string>
    </field>
    <field name="isActive">
      <string>true</string>
    </field>
  </object>
</object-param>

<object-param>
  <name>SLIDESHARE</name>
  <description/>
  <object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
    <field name="tagName">
      <string>SLIDESHARE</string>
    </field>
    <field name="replacement">
      <string>
        &lt;div style="width:425px; height:355px;" align="center"&gt;
        &lt;object style="margin:0px" width="425" height="355"&gt;
          &lt;param name="movie" value="http://static.slidesharecdn.com/swf/ssplayer2.swf?doc={option}&amp;
          &lt;param name="allowFullScreen" value="true"/&gt;
          &lt;param name="allowScriptAccess" value="always"/&gt;
          &lt;embed src="http://static.slidesharecdn.com/swf/ssplayer2.swf?doc={option}&amp;rel=0" type="a
          &lt;/embed&gt;
        &lt;/object&gt;
        &lt;b&gt;{param}&lt;/b&gt;&lt;/div&gt;
      </string>
    </field>
    <field name="description">
      <string>The [SLIDESHARE=option] tag allows you to run slide in slidesharecdn.com site.</string>
    </field>
    <field name="example">
      <string>[SLIDESHARE=slideId]My slide[/SLIDESHARE]</string>
    </field>
    <field name="isOption">
      <string>true</string>
    </field>
    <field name="isActive">
      <string>true</string>
    </field>
  </object>
</object-param>
</init-params>
</component-plugin>

```

- In which,

Name	Set method	Type	Description
forum.default.bbcodes	registerBBCodePlugin	org.exoplatform.ks.bbcode.spi.BBCodePlugin	BBCode plugin for data displayed on UI.

- The BBCode array is defined by the *org.exoplatform.ks.bbcode.spi.BBCodeData* object as below:

```
<object type="org.exoplatform.ks.bbcode.spi.BBCodeData">
  <field name="tagName">
    <string>I</string>
  </field>
  <field name="replacement">
    <string>&lt;i&gt;{param}&lt;/i&gt;</string>
  </field>
  <field name="description">
    <string>Set text in italic</string>
  </field>
  <field name="example">
    <string>[I]This text is italic[/I]</string>
  </field>
  <field name="isOption">
    <string>>false</string>
  </field>
  <field name="isActive">
    <string>true</string>
  </field>
</object>
```

- The BBCode includes basic data which are defined in the field tag with a specific name as below:

```
<field name="tagName">
  <string>I</string>
</field>
<field name="replacement">
  <string>&lt;i&gt;{param}&lt;/i&gt;</string>
</field>
<field name="description">
  <string>Set text in italic</string>
</field>
<field name="example">
  <string>[I]This text is italic[/I]</string>
</field>
<field name="isOption">
  <string>>false</string>
</field>
<field name="isActive">
  <string>true</string>
</field>
```

In which:

Field name	Value	Description
tagName	string	This is the text for the BBCode, which is put inside two square brackets. For example, for the bold tag, you type b - the BB Code Tag for this is b without the brackets.

Field name	Value	Description
replacement	string	This is the HTML code that replaces the BBCode entered by the user. Make sure that you include 'param' (without quotes) to insert the text between opening and closing BBCode tags, and 'option' for the parameter within the BBCode tag. You can only use option if 'Use Option' is selected.
description	string	This is a piece of text to describe the BBCode tag. This can include HTML tags if you want.
example	string	This is a sample piece of BBCode to use as an example for the particular BBCode. For example, to demonstrate the usage of <code>b</code> tag, enter <code>btext/b</code> .
isOption	true, false	The <code>tag=option /tag</code> style tag, rather than just a <code>tag /tag</code> style tag, is created if this option is selected.
isActive	true, false	To activate the BBCode tag.

3.2.3.2. Forums Initializer

3.2.3.2.1. Overview

The Initialization plug-in component defines the default forum data in the *xml* file, including categories, forums, topics and posts.

When the ForumService runs, it will get values which are returned from the Initialization plug-in component to initialize default data of Forum.

3.2.3.2.2. Configuration

3.2.3.2.2.1. Default forum data

The default forum data is configured in the *war:webapp/WEB-INF/conf/ksdemo/ks/services-configuration.xml* file.

In particular, at runtime of ForumService, the Initialization plug-in component is called, then the *services-configuration.xml* file is executed. The component-plugin named *addInitialDataPlugin* will refer to *org.exoplatform.forum.service.conf.InitializeForumPlugin* to execute some objects to create default data for the Forum application.

```
<component-plugin>
  <name>default.data</name>
  <set-method>addInitialDataPlugin</set-method>
  <type>org.exoplatform.forum.service.conf.InitializeForumPlugin</type>
  <description>description</description>
```

```

<init-params>
  <object-param>
    <name>livedemo.default.configuration</name>
    <description>initial data for live demo</description>
    <object type="org.exoplatform.forum.service.conf.ForumInitialData">
      <field name="categories">
        <collection type="java.util.ArrayList">
          <value>
            <object type="org.exoplatform.forum.service.conf.CategoryData">
              <field name="owner">
                <string>root</string>
              </field>
              <field name="name">
                <string>Knowledge Suite</string>
              </field>
              <field name="description">
                <string>All about eXo KS</string>
              </field>
              <field name="forums">
                <collection type="java.util.ArrayList">
                  <value>
                    <object type="org.exoplatform.forum.service.conf.ForumData">
                      <field name="owner"><string>root</string></field>
                      <field name="name"><string>Live demo</string></field>
                      <field name="description"><string>Questions about this demo</string></field>
                      <field name="topics">
                        <collection type="java.util.ArrayList">
                          <value>
                            <object type="org.exoplatform.forum.service.conf.TopicData">
                              <field name="name"><string>Demo data policy</string></field>
                              <field name="icon"><string>Shield</string></field>
                              <field name="owner"><string>root</string></field>
                              <field name="content"><string>
Welcome to eXo Knowledge Suite live demo!nnn

We hope you enjoy discovering eXo Forum and FAQ applications features.
You don't need to be logged in to see the applications in action. But the po
We didn't want you to miss them so, when you [b][url="/portal/public/classic
Anybody can become an administrator or a moderator and play in the sandbox!n
As a consequence, the data for this forum (including the accounts) is not me
[b][center]WE MAY RESET FORUMS AND FAQS ANYTIME[/center][b]nn
Enjoy and don't forget to send feedback at [email]ks@exoplatform.com[/email]
                              </string>
                            </object>
                          </value>
                        </collection>
                      </field>
                    </object>
                  </value>
                </collection>
              </field>
            </object>
          </value>
        </collection>
      </field>
    </object-param>
  </init-params>
</component-plugin>

```

- In which,

Name	Set-method	Type	Description
default.data	addInitialDataPlugin	org.exoplatform.forum.servi	The initial default data of Forum.

- Init-param

Name	Possible value	Default value	Description
livedemo.default.configuration	object	org.exoplatform.forum.service.conf.ForumInitialData	The initial data for live demo.

- Category array

After the `org.exoplatform.forum.service.conf.InitializeForumPlugin` object is executed, the `org.exoplatform.forum.service.conf.ForumInitialData` object is called. It returns a category array. The value of category array is defined by the `org.exoplatform.forum.service.conf.CategoryData` object as below:

```
<object-param>
  <name>livedemo.default.configuration</name>
  <description>initial data for live demo</description>
  <object type="org.exoplatform.forum.service.conf.ForumInitialData">
    <field name="categories">
      <collection type="java.util.ArrayList">
        <value>
          <object type="org.exoplatform.forum.service.conf.CategoryData">
            <field name="owner">
              <string>root</string>
            </field>
            <field name="name">
              <string>Knowledge Suite</string>
            </field>
            <field name="description">
              <string>All about eXo KS</string>
            </field>
            ...
          </object>
        </value>
      </collection>
    </field>
  </object>
</object-param>
```

1. Category includes some basic data which are defined in the *field* tag with a specific name as below:

```
<field name="owner">
  <string>root</string>
</field>
<field name="name">
  <string>Knowledge Suite</string>
</field>
<field name="description">
  <string>All about eXo KS</string>
</field>
```

In which:

Field	Possible value	Default value	Description	
owner	user id	root	The user who is the creator of category.	
name	string	Knowledge Suite	The title of category.	
description	string	All about eXo KS	The brief	

Field	Possible value	Default value	Description	
			description of category.	

- Modify values of Category

Values of the default category can be changed by changing text values in the string tag of each field by the other one. In the sample code above, the `org.exoplatform.forum.service.conf.CategoryData` object is called. It means that only one default category is defined. If you want to define more default categories, repeat calling `org.exoplatform.forum.service.conf.CategoryData` object and define values for the new category with the sample code as below:

```
<value>
  <object type="org.exoplatform.forum.service.conf.CategoryData">
    <field name=" ">
      ...
    </field>
  </object>
</value>
```

3.2.3.2.2. Forum array

1. Category may contain one or more forums. The value of Forum is defined in the *forums* field. It returns a forum array. The value of forum array is defined by the `org.exoplatform.forum.service.conf.ForumData` object as below:

```
<field name="forums">
  <collection type="java.util.ArrayList">
    <value>
      <object type="org.exoplatform.forum.service.conf.ForumData">
        <field name="owner"><string>root</string></field>
        <field name="name"><string>Live demo</string></field>
        <field name="description"><string>Questions about this demo</string></field>
        ...
      </object>
    </value>
  </collection>
</field>
```

- Basic forum data

Forum includes some basic data which are defined in the field tag with the specific name as above.

In which:

Field	Possible value	Default value	Description	
owner	user id	root	The creator of default forum.	
name	string	Live demo	The name or title of default forum.	
description	string	Questions about	The brief	

Field	Possible value	Default value	Description	
		this demo	description of default forum.	

The values of default forum can be changed by changing text values in string tag of each field by the other one.

In the sample code above, `org.exoplatform.forum.service.conf.ForumData` object is called only one time. It means that only one default forum is defined inside the default category named Knowledge Suite. If you want to define more default forums, repeat calling the `org.exoplatform.forum.service.conf.ForumData` object and define values for the new forum with the sample code as below:

```
<value>
  <object type="org.exoplatform.forum.service.conf.ForumData">
    <field name=" " >
      ...
    </field>
  </object>
</value>
```

3.2.3.2.3. Forum topics

1. Forum may contain one or more topics. The value of topic is defined in the *topics* field. It returns a topic array. The value of topic array is defined by the `org.exoplatform.forum.service.conf.TopicData` object as below:

```
<field name="topics">
  <collection type="java.util.ArrayList">
    <value>
      <object type="org.exoplatform.forum.service.conf.TopicData">
        <field name="name"><string>Demo data policy</string></field>
        <field name="icon"><string>Tux</string></field>
        <field name="owner"><string>root</string></field>
        <field name="content"><string>Welcome to eXo Forum live demo. ... at anytime.</string></field>
        ...
      </object>
    </value>
  </collection>
</field>
```

A topic includes some basic data which are defined in the field tag with a specific name as above.

In which:

Field	Possible value	Default value	Description
name	string	Demo data policy	The name or title of default topic.
icon	string	Tux	The default icon of default topic.
owner	user id	root	The creator of default topic.
content	string	Welcome to eXo Forum live demo...at	The main content of default topic.

Field	Possible value	Default value	Description
		anytime.	

The values of default topic can be changed by changing text values in string tag of each field.

With the sample code above, `org.exoplatform.forum.service.conf.TopicData` object is called only one time. It means that only one default topic is defined inside the default forum named Live demo. If you want to define more default topics, repeat calling `org.exoplatform.forum.service.conf.TopicData` object and define values for the new topic with the sample code as below:

```
<value>
  <object type="org.exoplatform.forum.service.conf.TopicData">
    <field name=" ">
      ...
    </field>
  </object>
</value>
```

1. Topic may contain one or more posts. The value of the post is defined in *posts* field. It returns a post array. The value of the post array is defined by `org.exoplatform.forum.service.conf.PostData` object as below:

```
<field name="posts">
  <collection type="java.util.ArrayList">
    <value>
      <object type="org.exoplatform.forum.service.conf.PostData">
        <field name="name"><string>Reply: Demo data policy</string></field>
        <field name="icon"><string>IconsView</string></field>
        <field name="owner"><string>root</string></field>
        <field name="content"><string>Enjoy and don't forget to send feedback at ks@exoplatform.com</string></fi
        ...
      </object>
    </value>
  </collection>
</field>
```

A post includes some basic data which are defined in the *field* tag with a specific name as above.

In which:

Field	Possible value	Default value	Description	
name	string	Reply: Demo data policy	The name or title of default post.	
icon	string	IconsView	The default icon of default post.	
owner	user id	root	The creator of default post.	
content	string	Enjoy and don't forget to send feedback at ks@exoplatform.com	The main content of default post.	

The values of default post can be changed by changing text values in *string* tag of each *field*.

With the sample code above, the *org.exoplatform.forum.service.conf.PostData* object is called only one time. It means that only one default post is defined inside the default topic named *Demo data policy*. If you want to define more default posts, repeat calling *org.exoplatform.forum.service.conf.PostData* object and define values for the new post with the sample code as below:

```
<value>
  <object type="org.exoplatform.forum.service.conf.PostData">
    <field name=" ">
      ...
    </field>
  </object>
</value>
```

By fault, the default forum data can only be changed by editing in the *services-configuration.xml* file.

At runtime, the new changes in the *services-configuration.xml* file will be executed and updated, the default forum data will be created correspondingly.

3.2.3.3. Auto-prune

3.2.3.3.1. Overview

The Auto-prune component is to prune inactive topics which have not been viewed, edited or received for a given period. The "prune" operation does not denote to the physical removal of topics, but rather sets them invisible. The function helps you not clutter busy forums from outdated information.

When the Job Scheduler runs, it will get values returned from the Auto-prune plug-in component to identify topics which have to be inactivated in the Forum application. These topics will be invisible to users.

3.2.3.3.2. Configuration

The properties of Auto prune plug-in are configured in the *war:webapp/WEB-INF/ks-extension/ks/forum/prune-configuration.xml* file.

In details:

At runtime of Job Scheduler, the Auto prune plug-in component is called, then *prune-configuration.xml* file is executed. The component-plugin named *ForumDeactiveJob* will refer to *org.exoplatform.forum.service.conf.DeactivePeriodJob* to inactivate topics in Forum which meets predefined inactivation properties.

```
<component-plugin>
  <name>ForumDeactiveJob</name>
  <set-method>addPeriodJob</set-method>
  <type>org.exoplatform.forum.service.conf.DeactivePeriodJob</type>
  <description>add a Deactive job to the JobSchedulerService</description>
  <init-params>
    <properties-param>
      <name>job.info</name>
      <description>save the monitor data periodically</description>
      <property name="jobName" value="DeactiveJob"/>
      <property name="groupName" value="KnowlegedSuite"/>
      <property name="job" value="org.exoplatform.forum.service.conf.DeactiveJob"/>
      <property name="repeatCount" value="0"/>
      <property name="period" value="7200000"/> <!-- 2 hours-->
      <property name="startTime" value="+0"/>
      <property name="endTime" value=""/>
    </properties-param>
  </init-params>
```

```

<properties-param>
  <name>deactive.info</name>
  <description/>
  <property name="inactiveDays" value="15"/>
  <property name="forumName" value="Live demo"/>
</properties-param>
</init-params>
</component-plugin>

```

- In which,

Name	Set-method	Type	Description
ForumDeactiveJob	addPeriodJob	org.exoplatform.forum.service.conf.DeactiveJob	The name of DeactiveJob in the JobSchedulerService.

- The properties for the Auto-prune plug-in are defined in the *property* tag with format as below:

```

...
  <property name="jobName" value="DeactiveJob"/>
  <property name="groupName" value="KnowlegedSuite"/>
  <property name="job" value="org.exoplatform.forum.service.conf.DeactiveJob"/>
  <property name="repeatCount" value="0"/>
  <property name="period" value="7200000"/> <!-- 2 hours-->
  <property name="startTime" value="+0"/>
  <property name="endTime" value=""/>
...
  <property name="inactiveDays" value="15"/>
  <property name="forumName" value="Live demo"/>
...

```

In details:

Property name	Possible value	Default value	Description
jobname	String	DeactiveJob	The name of job which will be executed.
groupname	String	KnowlegedSuite	The name of application which will be executed.
job	Class path	org.exoplatform.forum.service.conf.DeactiveJob	The reference function of the job which will be executed.
repeatCount	Long	0	The repeating time for the job. It means that how many times the job will be executed. It means that <i>DecactiveJob</i> is called at runtime only. It does not repeat. Assume that the value is 2 or 3, <i>DecactiveJob</i> is called 2 or 3 times.
period	Long	72000000	The interval to execute the job.

Property name	Possible value	Default value	Description
starttime	Integer	+0	The start time when the function executes. exampleexample the starttime is <u>0</u> , meaning that the time to start executing <i>DecactiveJob</i> is the runtime.
endtime	Integer	null	The end time when the function stops executing. exampleexample endtime is blank. meaning that there is no limitation for the end time for <i>DecactiveJob</i> .

With start and end time, you can give a specific date in format:yyyy-mm-dd HH:mm:ss.sss to define the start and end time for *DecactiveJob* . Besides, deactive information is also defined:

Property name	Possible value	Default value	Description
inactiveDays	Integer	15	The number of days the topic has not been activated. exampleexample inactivateDays is 1, meaning that all the topics, which have 1 inactivated day, will be set as inactivated status. They will be invisible.
forumname	String	Live Demo	The name of Forum which will be checked for Auto-prune. In case, forumname is blank. It means that all forums will be checked for auto prune. forumname is Live demo. It means that only the forum named 'Live demo' is checked for Auto prune.

By fault, the default properties can only be changed by editing its value in *prune-configuration.xml* file.

At the runtime, the new changes in the *prune-configuration.xml* file are executed and updated. After that, the Auto-prune plug-in will be executed, depending on its properties.

3.2.3.4. User Statistics

3.2.3.4.1. Overview

The Auto-count Active Users component is to calculate the number of active users automatically. A user is considered as the active user only when he/she often adds topic/post in Forum and his/her last post date matches the predefined interval time.

For example, if one user doesnot have any new posts after 15 days, he/she is not considered as an active user.

When Job Scheduler runs, it will get values returned from the Auto-count Active Users plug-in component to identify the number of active users. This value is updated to Active Members information when the user views Forum statistics.

3.2.3.4.2. Configuration

The properties of Auto-count Active Users plug-in is configured in the `war:webapp/WEB-INF/ks-extension/ks/forum/statistics-configuration.xml` file.

In details:

At runtime of Job Scheduler, the Auto-count Active Users plug-in component is called, then `statistics-configuration.xml` file is executed. The component-plugin named `RecountActiveUserJob` will refer to `org.exoplatform.forum.service.conf.RecountActiveUserPeriodJob` to calculate the number of active users.

```
<component-plugin>
  <name>RecountActiveUserJob</name>
  <set-method>addPeriodJob</set-method>
  <type>org.exoplatform.forum.service.conf.RecountActiveUserPeriodJob</type>
  <description>add a RecountActiveUser job to the JobSchedulerService</description>
  <init-params>
    <properties-param>
      <name>job.info</name>
      <description>save the monitor data periodically</description>
      <property name="jobName" value="RecountActiveUserJob"/>
      <property name="groupName" value="KnowlegedSuite"/>
      <property name="job" value="org.exoplatform.forum.service.conf.RecountActiveUserJob"/>
      <property name="repeatCount" value="0"/>
      <property name="period" value="7200000"/> <!-- 2 hours-->
      <property name="startTime" value="+0"/>
      <property name="endTime" value=""/>
    </properties-param>
    <properties-param>
      <name>RecountActiveUser.info</name>
      <description/>
      <property name="lastPost" value="15"/> <!-- users are active if have last posts in 15 day -->
    </properties-param>
  </init-params>
</component-plugin>
```

- In which,

Name	Method	Type	Description
RecountActiveUserJob	addPeriodJob	org.exoplatform.forum.service.conf.RecountActiveUserPeriodJob	To add RecountActiveUser job to the JobSchedulerService.

- The properties for Auto-count Active Members plug-in are defined in the property tag as below:

```

...
    <property name="jobName" value="RecountActiveUserJob"/>
    <property name="groupName" value="KnowlegedSuite"/>
    <property name="job" value="org.exoplatform.forum.service.conf.RecountActiveUserJob"/>
    <property name="repeatCount" value="0"/>
    <property name="period" value="7200000"/> <!-- 2 hours -->
    <property name="startTime" value="+0"/>
    <property name="endTime" value=""/>
...
<property name="lastPost" value="15"/>
...

```

In which:

Property name	Possible value	Default value	Description
jobname	String	RecountActiveUserJob	The name of job which will be executed.
groupname	String	KnowlegedSuite	The name of application which will be executed.
job	Class path	org.exoplatform.forum.service.conf.RecountActiveUserJob	The name of job which will be executed.
repeatCount	Long	0	The number of times the job is repeated. If repeatCount is 0, RecountActiveUserJob is called at runtime only. It does not repeat. If the number is set to 2 or 3, RecountActiveUserJob will be called two or three times.
period	Long	7200000 (millisecond) exampleexample (equal to 2 hours)	The interval time to execute the job.
starttime	Integer	0	The start time when the function executes. exampleexample <u>starttime is 0, meaning that the time to start executing RecountActiveUserJob is the runtime.</u>
endtime	Integer	null	The end time when the function stops executing. exampleexample <i>endtime</i> is blank, meaning that there is no limitation for the end time for <i>RecountActiveUserJob</i> .

With start and end time, you can give a specific date in format:yyyy-mm-dd HH:mm:ss.sss to define the start and end time for *RecountActiveUserJob* . The information of active time is also defined:

Property name	Possible value	Default value	Description
lastPost	Integer	15	The number of days that the user has added the last post. exampleexample <i>lastPost</i> is 15, meaning that all users, who have any new post within 15 days as from their last post date, are active members.

By default, the default properties can only be changed by editing its values in the *statistics-configuration.xml* file.

At runtime, the new changes in the *statistics-configuration.xml* file will be executed and updated. The Auto-count Active Users plug-in will be executed, depending on its properties.

3.2.3.5. Default User Profile

3.2.3.5.1. Overview

The default forum settings are a set of settings for a new account. It contains declarations of time zone, short date format, long date format, time format, max topic per page, max post per page and flag for showing forum jump or not. The settings are simple, and user can change such settings to UI-based functions later.

3.2.3.5.2. Configuration

This configuration is declared in the file named "ks-configuration.xml". Its path is "*tomcat source/webapps/ks-extension/WEB-INF/ks-extension/ks/ks-configuration.xml*" if you are running tomcat and "*project source/extension/webapp/src/main/webapp/WEB-INF/ks-extension/ks/ks-configuration.xml*" if you are in the developing phase.

In details:

```

...
<external-component-plugins>
  <target-component>org.exoplatform.services.organization.OrganizationService</target-component>
  <component-plugin>
    ...
    <init-params>
      <properties-param>
        <name>user.profile.setting</name>
        <description>set default user profile</description>
        <property name="timeZone" value="GMT"/>
        <property name="shortDateFormat" value="MM/dd/yyyy"/>
        <property name="longDateFormat" value="DDD,MMM dd,yyyy"/>
        <property name="timeFormat" value="hh:mm a"/>
        <property name="maxTopic" value="10"/>
        <property name="maxPost" value="10"/>
        <property name="isShowForumJump" value="true"/>
      </properties-param>
    </init-params>
  </component-plugin>
</external-component-plugins>

```

```

</component-plugin>
</external-component-plugins>
...

```

In which:

Parameter	Possible Value	Default Value	Description
timeZone	Time zone id	GMT	Time zone set by user. For example: GMT, GMT-05:00, GMT+07:00, GMT+08:30 ... exampleexample Visit the website: http://java.sun.com/j2se/1.4.2/docs/api for more detail.
shortDateFormat	Valid Java Date format	MM/dd/yyyy	The format to display short information of date exampleexample Visit the website: http://java.sun.com/j2se/1.4.2/docs/api to ensure the exact format.)
longDateFormat	Valid Java Date format	DDD, MMM dd, yyyy	The format to display a date with more information exampleexample Visit the website http://java.sun.com/j2se/1.4.2/docs/api to ensure the exact format.
timeFormat	valid Java Date format	hh:mm a	The format to view time (for example, hour, minute,) exampleexample Visit the website: http://java.sun.com/j2se/1.4.2/docs/api to ensure the exact format.
maxTopic	Integer	10	The maximum number of topics on a page.
maxPost	Integer	10	The maximum number of posts on a page.
isShowForumJump	true / false	true	To show the forum jump or not.

3.2.4. Answer Configuration

3.2.4.1. Answers Initializer

3.2.4.1.1. Overview

The Initialization plug-in component is to define the default answers data in the *.xml* or *.zip* file. It includes categories of question that should be exported from a Answers application.

When the Answers Service starts, it will get values returned from the Initialization plug-in component to initialize the default Answers data.

3.2.4.1.2. Configuration

3.2.4.1.2.1. Default Answers data

The default Answers data is configured in the *services-configuration.xml* file.

In details:

At run time of Answers Service, Initialization plug-in component is called, then *services-configuration.xml* file is executed. The component-plugin named *addInitialDataPlugin* will refer to *org.exoplatform.faq.service.InitializeDataPlugin* to execute some objects to create default data.

The default data in the the *.zip* file is initialized.

```
<component-plugin>
  <name>technical-faq</name>
  <set-method>addInitialDataPlugin</set-method>
  <type>org.exoplatform.faq.service.InitialDataPlugin</type>
  <description>Initialize</description>
  <init-params>
    <value-param>
      <name>location</name>
      <description>location where Answers export format file is stored</description>
      <value>war:/data/Technical-FAQ.zip</value>
    </value-param>
  </init-params>
</component-plugin>
```

- In which,

Name	Set-Method	Type	Description
technical-faq	addInitialDataPlugin	org.exoplatform.faq.service.InitialDataPlugin	Initialize

- Init-param

Name	Possible value	Default value	Description
location	string	war:/data/Technical-FAQ.zip	This location where Answers export format file is stored.

If the default data is in the xml format:

```
<value>war:/data/Technical-FAQ.xml</value>
```

By default, the default Answers data can only import if the importing categories does not exist in database.

To initialize default data in multiple files, it is required to declare them in multiple plug-ins.

```
<component-plugin>
.....
</component-plugin>
```

3.2.4.2. Answers Email Templates Configuration

3.2.4.2.1. Overview

Answers is configured mainly in the file:

- Portlet preferences: **/webapps/faq/WEB-INF/portlet.xml**

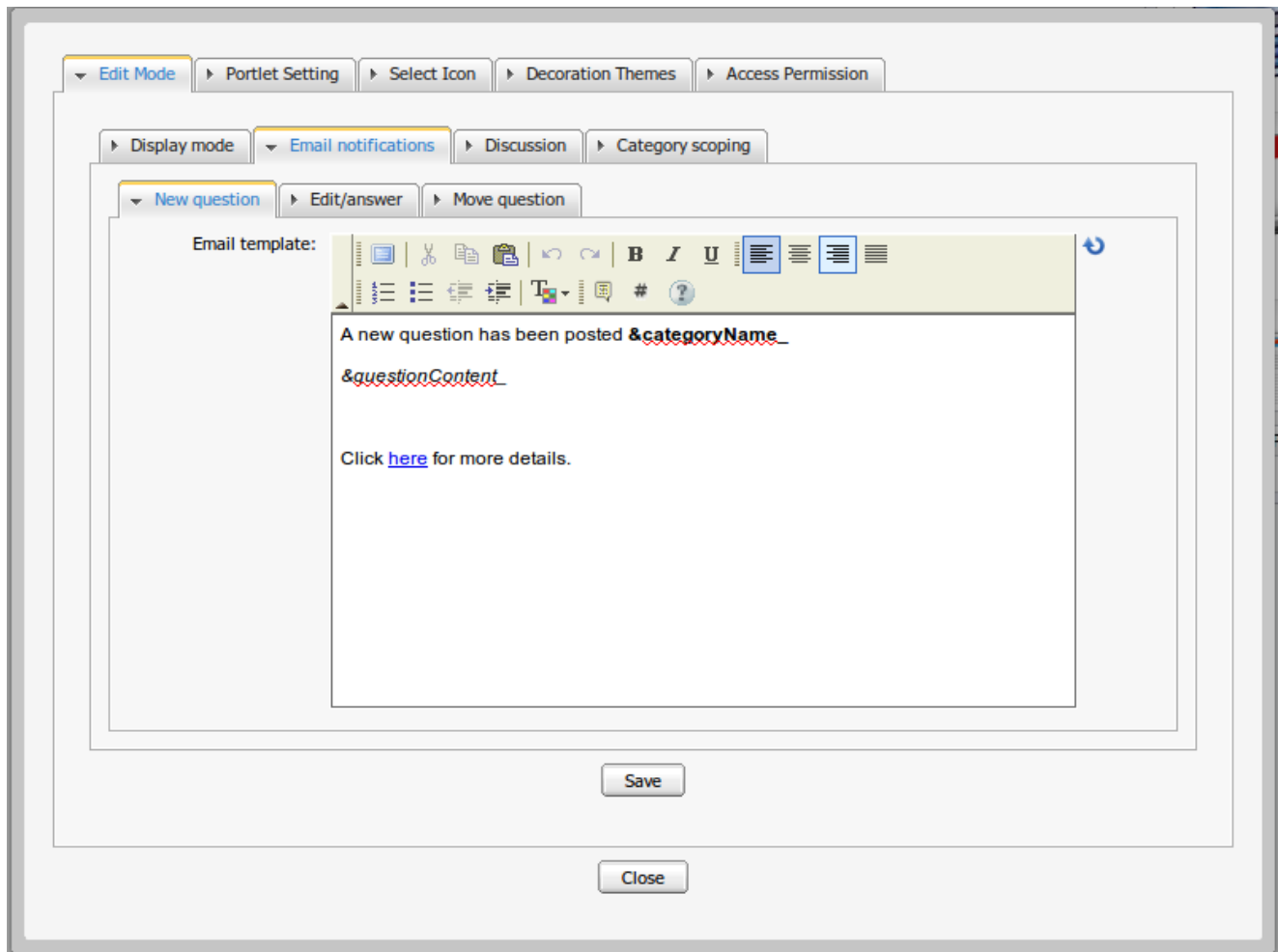


Note

For general KS configuration information, please refer to [KS Configuration](#) section

3.2.4.2.2. Configuration

The Mail templates use a specific syntax, enabling you to create a customized email message in the Edit mode via three templates: New question, Edit/answer, and Move question.



Parameters are used in templates consist of:

Parameter	Description
&categoryName	To load the category's name.
&questionContent	To load the question's content.
&questionResponse	To load the question's answer.
&questionLink	To load the link to question in the Answers portlet.

Chapter 4. Developer reference

4.1. Extension points

There are some extension points in eXo Knowledge, so that you can control how these components work by implementing or extending default implementations, then reconfigure these new components in the *configuration.xml* file.

4.1.1. ForumEventLifeCycle

ForumEventLifeCycle enables you to listen to the lifecycle of a forum. By implementing ForumEventLifeCycle, you can be notified of new posts and replies, categories and topics. This installation will be injected when the data flow is called to save data. You can find the configuration file of this component at: *ext/social-integration/src/main/resources/conf/portal/configuration.xml*. For example, when you add a Forum to a space of the Social application and want new activities of Forum (such as, new posts and topics) to be updated to the activities of space, do as follows:

```
<external-component-plugins>
  <target-component>org.exoplatform.forum.service.ForumService</target-component>
  <component-plugin>
    <name>ForumEventListener</name>
    <set-method>addListenerPlugin</set-method>
    <type>org.exoplatform.ks.ext.impl.ForumSpaceActivityPublisher</type>
  </component-plugin>
</external-component-plugins>
```

Explanation: ForumSpaceActivityPublisher is the class to implement ForumEventLifeCycle.

4.1.2. AnswerEventLifeCycle

AnswerEventLifeCycle installs event updates for the Answers data that is injected while saving answers, saving questions or posting comments. You can find the configuration file of this component at: *ext/social-integration/src/main/resources/conf/portal/configuration.xml*. For example, when you add an Answers to a space of the Social application and want new activities of Answers to be updated to the activities of space, do as follows:

```
<external-component-plugins>
  <target-component>org.exoplatform.faq.service.FAQService</target-component>
  <component-plugin>
    <name>AnswerEventListener</name>
    <set-method>addListenerPlugin</set-method>
    <type>org.exoplatform.ks.ext.impl.AnswersSpaceActivityPublisher</type>
  </component-plugin>
</external-component-plugins>
```

In which, AnswersSpaceActivityPublisher is the class to implement ForumEventLifeCycle.

4.1.3. BBCodeRenderer

BBCodeRenderer is used in the core of eXo Knowledge to render BBCodes. In which, the data input is text, containing BBCode tags. The data output will be BBCode tags which have been encrypted into HTML tags.

You can find the configuration file of this component at: *extension/webapp/src/main/webapp/WEB-INF/ks-extension/ks/forum/bbcodes-configuration.xml*. For example, to register BBCodeRenderer, do as follows:

```
<external-component-plugins>
  <target-component>org.exoplatform.ks.rendering.MarkupRenderingService</target-component>
  <component-plugin>
    <name>BBCodeRenderer</name>
    <set-method>registerRenderer</set-method>
    <type>org.exoplatform.ks.rendering.spi.RendererPlugin</type>
    <description>BBCode renderer</description>
    <init-params>
      <object-param>
        <name>renderer</name>
        <description>Extended BBCodeRenderer</description>
        <object type="org.exoplatform.ks.bbcode.core.BBCodeRenderer">
          <field name="bbCodeProvider">
            <object type="org.exoplatform.ks.bbcode.core.ExtendedBBCodeProvider"/>
          </field>
        </object>
      </object-param>
    </init-params>
  </component-plugin>
</external-component-plugins>
```

Explanation: ExtendedBBCodeProvider is the class to implement BBCodeProvider

4.2. Internal API

Applications of eXo Knowledge, such as Forum, Answers and Polls, use REST services to communicate with the server. This section describes REST Services of internal API.

4.2.1. Forum application

The Forum application of eXo Knowledge uses the ForumWebservice to provide all APIs to work with Forum, such as filtering IPs, viewing RSS, and more.

Service name	Service URL	Description	Location
ForumWebservice	<code>\$portalName/\$restcontext/ks/forum/</code>	Forum extended services of the Forum application.	* Maven groupId: org.exoplatform.ks * ArtifactId: exo.ks.web.webservice

• APIs Usage

Use the following APIs to build all the functions of Forum application:

Name	Description	Service URL	Parameters	Expected Values
getMessage	To get all new posts with the number	<code>\$portalName/\$restcontext/ks/forum/getMessage/</code>	<code>String maxLen</code>	<code>Integer</code>

Name	Description	Service endpoint	URL	Parameters	Expected Values
	based on the <i>maxcount</i> value.				
filterIps	To ban IPs with no access to Forum.	\$portalName/\$restcontextname/ks/forum/	String str	String	In the IP format.
filterIpBanForum	To ban IPs with no access to a specific Forum.	\$portalName/\$restcontextname/ks/forum/	String forumId String str	String	In the IP format, string in the Forum format
filterTagNameForum	To do quick search for tags that returns the list of tags.	\$portalName/\$restcontextname/ks/forum/	String str String userAndTopicId		/filterTagNameForum/ Tag name id of user and topic
viewrss	To process the request by the user when he/she wants to view RSS.	\$portalName/\$restcontextname/ks/forum/	String resourceId		/rss/ category id forum id topic id
userrss	To process the request by the user when he/she wants to view their own collected RSS.	\$portalName/\$restcontextname/ks/forum/	String resourceId		/user/ userId

4.2.2. Answers application

The Answers application of eXo Knowledge uses the FAQWebservice to view RSS.

Service name	Service URL	Description	Location
FAQWebservice	\$portalName/\$restcontextname/ks/forum/	Framework extended services of the Answers application.	* Maven groupId: org.exoplatform.ks * ArtifactId: exo.ks.eXoApplication.faq.service

• APIs Usage

Use the following APIs to build all the functions of Answers application:

Name	Description	Service endpoint	URL	Parameters	Expected Values
viewrss	To view RSS	\$portalName/\$restcontextname/ks/da	String rssId	category id, question id	

4.2.3. Polls application

The Polls application of eXo Knowledge uses the PollWebservice to create and interact with the Polls gadget.

Service name	Service URL	Description	Location
PollWebservice	\$portalName/\$restcontextname/ks/service	From an external service of the Polls application.	* Maven groupId: org.exoplatform.ks * ArtifactId: exo.ks.eXoApplication.poll.service

• APIs Usage

Use the following APIs to build all the functions of Answers application:

Name	Description	Service endpoint	URL	Parameters	Expected Values
viewPoll	To return data of the Polls system	\$portalName/\$restcontextname/private/ks/poll	String pollId	id of poll	viewpoll/ id of poll
votePoll	To update data for the Polls with the returned id	\$portalName/\$restcontextname/private/ks/poll	String pollId	String indexVote	id of poll integer