Liferay Portal 6.2
Enterprise Intranets

A practical guide to adopting portal development best practices in an enterprise world

Navin Agarwal
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Author
Navin Agarwal

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Cover Work
Arvindkumar Gupta
Navin Agarwal has been working extensively with Liferay for more than 5 years. This includes work on Java and J2EE technologies. He has executed projects using Liferay in various domains (including retail, insurance, networking, and medical), providing solutions for collaboration, document management, and web content management systems. He also has extensive experience in integrating Liferay with Alfresco and various third-party tools.

He started his career as an intern in portal technology with Sun Microsystems, India. Currently, he is working for IEEE as a senior programmer analyst. He is also an expert in Liferay integration with Ad Server OpenX, different search engines, enterprise content (including video, audio, images, documents, and web content), and other technologies such as Activiti, BPM Intalio, business intelligence, LDAP, and SSO.

Besides development and consulting, he has also delivered training programs on Liferay and Alfresco. He has experience in various software development life cycle (SDLC) models and different technologies, including MongoDB and Pentaho BI, and has worked with numerous frameworks, including Spring, Struts, Hibernate, Apache PDFBox, and ICEfaces.

In his free time, he enjoys writing blogs and reading technical articles. You can send your queries, if any, directly to his e-mail ID at navin.agarwall11@gmail.com. You can even go through his blog at https://navinagarwalmca.wordpress.com/ to learn more about Liferay Portal.
I would like to thank all my friends and the team members who work with me. I would also like to thank Rajeeva Lochana, Abhishek Saxena, James Falkner, Jorge Ferrer, Juan Fernández, and Ganesh Samarthym for their valuable support and guidance.

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Chandan Sharma is currently a software programmer analyst at Mroads, a company building a next-generation workforce that leverages technology and awareness, located in the U.S. At Mroads, his primary responsibility is designing and implementing solutions that use Liferay, Spring Framework, and Hibernate for portals and RESTful/SOAP web services. Previously, he worked as a senior consultant for CIGNEX Datamatics and TransIT mPower Labs. He also likes to coach people. Throughout his career, he has had hands-on experience in Liferay with Spring Framework, Hibernate, and Liferay integration with other applications, the cloud, and so on. He runs his own technical blog at http://codingloading.com.

I would like to thank Packt Publishing for the opportunity to be a technical reviewer for this book. I would also like to thank Gaurav Vaish (the author of Getting Started with NoSQL), who inspired me to get into reviewing books. And I would like to thank Meenu Gupta, who is like a sister to me, for her support and encouragement in reviewing this book. I would also like to thank my friends ☺ group (Monalisa Sahu, Manoj Patro, and Debasis Padhi) for their encouragement and support when I do new things in my life. Special thanks to my best friend for helping me in reviewing this book.
Kartikeya Sharma (Kartik) has over 10 years of experience in application architecture, design, development, implementation, and maintenance and the administration of portals and content management systems. He is currently working as a technical architect at Datamatics. His areas of expertise include Java/J2EE, Spring, SOAP, REST, Pega, and various content management and portal technologies, such as Liferay, WebLogic, WebCenter, Vignette, Documentum, SharePoint, and Alfresco.

He can be reached via LinkedIn at https://www.linkedin.com/in/kartiksharma84.

You can find his blog about various ECM and Portal technologies at http://www.ecmpexperts.com.

I would like to thank my wife, Punima Sharma, for her support, understanding, and patience during the long hours of work. I would also like to thank my parents and my manager, Aashish Thakur, for their constant encouragement.

Shuyang Zhou is a software architect focused on performance optimization and infrastructure development. Since joining Liferay in 2009, he has significantly improved Liferay Portal's performance and developed a high-performance benchmark toolset for performance tuning and monitoring. He has developed Liferay Portal's AOP, caching, and cluster infrastructure. He has also developed a set of low-level, high-performance concurrency tools and IO utilities, portlet container separation, and the portal resiliency feature that allows portlets to be executed from separate JVMs to achieve physical process isolation for better stability and better hardware resource utilization on high-end servers. Recently, he has focused on Liferay Portal Continuous Integration testing automation on machines on a large scale.

Shuyang holds a bachelor's degree in electronic and information engineering and a master's degree in communications and information systems from Dalian University of Technology.
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preface</td>
<td>xv</td>
</tr>
<tr>
<td>Chapter 1: Introducing Liferay for Your Intranet</td>
<td>1</td>
</tr>
<tr>
<td>Liferay Portal makes life easy</td>
<td>1</td>
</tr>
<tr>
<td>Hosted discussions</td>
<td>1</td>
</tr>
<tr>
<td>Collaborative documents using wikis</td>
<td>2</td>
</tr>
<tr>
<td>Team and individual blogs</td>
<td>2</td>
</tr>
<tr>
<td>Shared calendars</td>
<td>3</td>
</tr>
<tr>
<td>Document management – CMS</td>
<td>3</td>
</tr>
<tr>
<td>Web content management – WCM</td>
<td>3</td>
</tr>
<tr>
<td>Personalization and internalization</td>
<td>4</td>
</tr>
<tr>
<td>Workflow, staging, scheduling, and publishing</td>
<td>4</td>
</tr>
<tr>
<td>Social networks and Social Office</td>
<td>5</td>
</tr>
<tr>
<td>Liferay Sync and Marketplace</td>
<td>5</td>
</tr>
<tr>
<td>More features</td>
<td>6</td>
</tr>
<tr>
<td>Everything in one place</td>
<td>6</td>
</tr>
<tr>
<td>Introducing Palm Tree Publications</td>
<td>7</td>
</tr>
<tr>
<td>Introducing Liferay Portal's architecture and framework</td>
<td>9</td>
</tr>
<tr>
<td>Service-oriented architecture</td>
<td>10</td>
</tr>
<tr>
<td>Understanding Enterprise Service Bus</td>
<td>10</td>
</tr>
<tr>
<td>Understanding the advantages of using Liferay to build an intranet</td>
<td>12</td>
</tr>
<tr>
<td>Other advantages of Liferay</td>
<td>14</td>
</tr>
<tr>
<td>Corporate extranets</td>
<td>15</td>
</tr>
<tr>
<td>Out-of-the-box portlets and features</td>
<td>16</td>
</tr>
<tr>
<td>Finding more information on Liferay</td>
<td>19</td>
</tr>
<tr>
<td>Summary</td>
<td>20</td>
</tr>
</tbody>
</table>
# Table of Contents

## Chapter 2: Setting Up a Home Page and Navigation

### Structure for the Intranet

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiencing the portal</td>
<td>22</td>
</tr>
<tr>
<td>Getting portal pages</td>
<td>23</td>
</tr>
<tr>
<td>The working of the portal</td>
<td>27</td>
</tr>
<tr>
<td>Experiencing portlets</td>
<td>28</td>
</tr>
<tr>
<td>Using the portlet container</td>
<td>29</td>
</tr>
<tr>
<td>The life cycle of a portlet</td>
<td>29</td>
</tr>
<tr>
<td>Terminologies, scope, and hierarchy within the portal</td>
<td>32</td>
</tr>
<tr>
<td>Setting up the portal</td>
<td>33</td>
</tr>
<tr>
<td>Installing Liferay on an existing application server</td>
<td>33</td>
</tr>
<tr>
<td>Using the Liferay Portal bundled with GlassFish 3.1.x in Windows</td>
<td>34</td>
</tr>
<tr>
<td>Using Liferay Portal bundled with Tomcat 6.x in Linux</td>
<td>35</td>
</tr>
<tr>
<td>Setting up production servers</td>
<td>36</td>
</tr>
<tr>
<td>Setting up domains</td>
<td>37</td>
</tr>
<tr>
<td>Shortening the URL</td>
<td>37</td>
</tr>
<tr>
<td>More options for portal installation</td>
<td>37</td>
</tr>
<tr>
<td>A flexible deployment matrix</td>
<td>38</td>
</tr>
<tr>
<td><strong>Building the Palm Tree Publications site</strong></td>
<td>38</td>
</tr>
<tr>
<td>Building pages</td>
<td>39</td>
</tr>
<tr>
<td>Adding pages</td>
<td>40</td>
</tr>
<tr>
<td>Removing pages</td>
<td>41</td>
</tr>
<tr>
<td>Adding portlets</td>
<td>42</td>
</tr>
<tr>
<td>Removing portlets</td>
<td>43</td>
</tr>
<tr>
<td>Changing the layout templates</td>
<td>43</td>
</tr>
<tr>
<td><strong>Setting up portal pages</strong></td>
<td>45</td>
</tr>
<tr>
<td>Adding a child page</td>
<td>45</td>
</tr>
<tr>
<td>Page type / template</td>
<td>46</td>
</tr>
<tr>
<td>Changing the display order</td>
<td>48</td>
</tr>
<tr>
<td>Providing a friendly URL for a page</td>
<td>48</td>
</tr>
<tr>
<td>Copying pages or portlets</td>
<td>49</td>
</tr>
<tr>
<td>Deleting a page</td>
<td>49</td>
</tr>
<tr>
<td>Multiple languages</td>
<td>50</td>
</tr>
<tr>
<td>Changing the look and feel – themes</td>
<td>50</td>
</tr>
<tr>
<td>Managing other settings on a page</td>
<td>51</td>
</tr>
<tr>
<td><strong>Customizing portlets</strong></td>
<td>53</td>
</tr>
<tr>
<td><strong>Navigating the structure of an intranet site</strong></td>
<td>55</td>
</tr>
<tr>
<td>Configuring a portal</td>
<td>56</td>
</tr>
<tr>
<td>Configuring portal paths</td>
<td>57</td>
</tr>
<tr>
<td>Adding extended properties files</td>
<td>58</td>
</tr>
<tr>
<td>Portal structure</td>
<td>59</td>
</tr>
<tr>
<td>Portal context</td>
<td>60</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Terms of use page settings</td>
<td>61</td>
</tr>
<tr>
<td>Session settings</td>
<td>61</td>
</tr>
<tr>
<td>Default admin</td>
<td>63</td>
</tr>
<tr>
<td>Guest layouts</td>
<td>63</td>
</tr>
<tr>
<td>Friendly URLs</td>
<td>64</td>
</tr>
<tr>
<td>Mail configuration</td>
<td>64</td>
</tr>
<tr>
<td>Mail session</td>
<td>65</td>
</tr>
<tr>
<td>Java-mail</td>
<td>66</td>
</tr>
<tr>
<td>Mail hook</td>
<td>67</td>
</tr>
<tr>
<td><strong>Bringing pages together in action</strong></td>
<td>68</td>
</tr>
<tr>
<td>Adding comments on a page</td>
<td>68</td>
</tr>
<tr>
<td>Rating a page</td>
<td>69</td>
</tr>
<tr>
<td>Flagging content on a page</td>
<td>70</td>
</tr>
<tr>
<td><strong>Sharing portlets within a portal page</strong></td>
<td>71</td>
</tr>
<tr>
<td><strong>Configuring Control Panel</strong></td>
<td>72</td>
</tr>
<tr>
<td>Liferay 6.2 Control Panel</td>
<td>73</td>
</tr>
<tr>
<td>My Account</td>
<td>74</td>
</tr>
<tr>
<td>My Profile</td>
<td>76</td>
</tr>
<tr>
<td>My Dashboard</td>
<td>76</td>
</tr>
<tr>
<td>Configuration and settings</td>
<td>77</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>78</td>
</tr>
<tr>
<td><strong>Chapter 3: Bringing in Users</strong></td>
<td>79</td>
</tr>
<tr>
<td>Enterprise, departments, and locations</td>
<td>80</td>
</tr>
<tr>
<td>Role-based access control</td>
<td>81</td>
</tr>
<tr>
<td>Role and permission</td>
<td>82</td>
</tr>
<tr>
<td>User</td>
<td>83</td>
</tr>
<tr>
<td>Organization and location</td>
<td>83</td>
</tr>
<tr>
<td>User groups and sites</td>
<td>84</td>
</tr>
<tr>
<td>How is a site different from an organization?</td>
<td>84</td>
</tr>
<tr>
<td><strong>Organizations</strong></td>
<td>84</td>
</tr>
<tr>
<td>Managing organizations</td>
<td>86</td>
</tr>
<tr>
<td>Adding child organizations</td>
<td>86</td>
</tr>
<tr>
<td>Creating a site with private and public pages</td>
<td>88</td>
</tr>
<tr>
<td>Viewing organizations</td>
<td>89</td>
</tr>
<tr>
<td>Searching organizations</td>
<td>89</td>
</tr>
<tr>
<td>Editing an organization</td>
<td>90</td>
</tr>
<tr>
<td>Deleting an organization</td>
<td>91</td>
</tr>
<tr>
<td>Assigning users to an organization</td>
<td>92</td>
</tr>
<tr>
<td>Using organizations in an effective way</td>
<td>93</td>
</tr>
<tr>
<td>Location-based organizations</td>
<td>93</td>
</tr>
<tr>
<td>Adding a location for the enterprise</td>
<td>93</td>
</tr>
<tr>
<td>Adding locations for suborganizations</td>
<td>95</td>
</tr>
<tr>
<td>Creating a site with private and public pages</td>
<td>95</td>
</tr>
<tr>
<td>Table of Contents</td>
<td>Page</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Viewing locations</td>
<td>96</td>
</tr>
<tr>
<td>Searching locations</td>
<td>97</td>
</tr>
<tr>
<td>Editing a location</td>
<td>98</td>
</tr>
<tr>
<td>Deleting a location</td>
<td>99</td>
</tr>
<tr>
<td>Assigning users to a location</td>
<td>99</td>
</tr>
<tr>
<td>Using locations in an effective way</td>
<td>100</td>
</tr>
<tr>
<td><strong>Organization settings</strong></td>
<td>100</td>
</tr>
<tr>
<td>Organization types</td>
<td>101</td>
</tr>
<tr>
<td>Organization forms</td>
<td>101</td>
</tr>
<tr>
<td>Overriding assignment and membership</td>
<td>102</td>
</tr>
<tr>
<td><strong>Hierarchy tree and Shared Global</strong></td>
<td>103</td>
</tr>
<tr>
<td>The organization hierarchy</td>
<td>103</td>
</tr>
<tr>
<td>Shared Global</td>
<td>103</td>
</tr>
<tr>
<td><strong>User groups</strong></td>
<td>104</td>
</tr>
<tr>
<td>Adding a user group</td>
<td>104</td>
</tr>
<tr>
<td>Creating User Group Site with public pages and private pages</td>
<td>105</td>
</tr>
<tr>
<td><strong>Managing user groups</strong></td>
<td>106</td>
</tr>
<tr>
<td>Viewing user groups</td>
<td>106</td>
</tr>
<tr>
<td>Searching user groups</td>
<td>106</td>
</tr>
<tr>
<td>Editing a user group</td>
<td>106</td>
</tr>
<tr>
<td>Deleting user groups</td>
<td>107</td>
</tr>
<tr>
<td>Assigning users to a user group</td>
<td>107</td>
</tr>
<tr>
<td><strong>Users</strong></td>
<td>108</td>
</tr>
<tr>
<td>Adding users</td>
<td>108</td>
</tr>
<tr>
<td>What's happening?</td>
<td>110</td>
</tr>
<tr>
<td>Adding more users</td>
<td>110</td>
</tr>
<tr>
<td>Creating a personal site with public and private pages</td>
<td>111</td>
</tr>
<tr>
<td>Adding users in bulk</td>
<td>112</td>
</tr>
<tr>
<td>Creating an account on the fly</td>
<td>112</td>
</tr>
<tr>
<td>What to do when a user forgets the password?</td>
<td>113</td>
</tr>
<tr>
<td><strong>Managing users</strong></td>
<td>113</td>
</tr>
<tr>
<td>Viewing users</td>
<td>114</td>
</tr>
<tr>
<td>Searching for users</td>
<td>115</td>
</tr>
<tr>
<td>Editing a user profile</td>
<td>115</td>
</tr>
<tr>
<td>Deactivating a user</td>
<td>117</td>
</tr>
<tr>
<td>Activating a user</td>
<td>118</td>
</tr>
<tr>
<td>Deleting a user</td>
<td>118</td>
</tr>
<tr>
<td>Impersonating a user</td>
<td>119</td>
</tr>
<tr>
<td>Using the Actions tab</td>
<td>119</td>
</tr>
<tr>
<td><strong>User settings</strong></td>
<td>119</td>
</tr>
<tr>
<td>User forms</td>
<td>120</td>
</tr>
<tr>
<td>Overriding user-related properties</td>
<td>120</td>
</tr>
<tr>
<td><strong>Sites</strong></td>
<td>122</td>
</tr>
<tr>
<td>Site Memberships</td>
<td>125</td>
</tr>
<tr>
<td>Team</td>
<td>126</td>
</tr>
<tr>
<td>Creating Team</td>
<td>126</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Site Templates</td>
<td>127</td>
</tr>
<tr>
<td><strong>Authentications</strong></td>
<td>129</td>
</tr>
<tr>
<td>General configuration</td>
<td>129</td>
</tr>
<tr>
<td>What's happening?</td>
<td>130</td>
</tr>
<tr>
<td>Auto login</td>
<td>131</td>
</tr>
<tr>
<td>LDAP authentication</td>
<td>131</td>
</tr>
<tr>
<td>Using LDAP effectively</td>
<td>133</td>
</tr>
<tr>
<td>LDAP authentication chain</td>
<td>134</td>
</tr>
<tr>
<td>CAPTCHA</td>
<td>134</td>
</tr>
<tr>
<td>SSO authentication</td>
<td>135</td>
</tr>
<tr>
<td>OpenID authentication</td>
<td>137</td>
</tr>
<tr>
<td>Open SSO authentication</td>
<td>137</td>
</tr>
<tr>
<td>General settings</td>
<td>139</td>
</tr>
<tr>
<td><strong>Roles</strong></td>
<td>140</td>
</tr>
<tr>
<td>Adding a role</td>
<td>142</td>
</tr>
<tr>
<td>Editing a role</td>
<td>142</td>
</tr>
<tr>
<td>Deleting roles</td>
<td>142</td>
</tr>
<tr>
<td>Assigning members</td>
<td>143</td>
</tr>
<tr>
<td><strong>Authorization</strong></td>
<td>143</td>
</tr>
<tr>
<td>Permission</td>
<td>143</td>
</tr>
<tr>
<td>Defining permissions on a role</td>
<td>144</td>
</tr>
<tr>
<td>Permission algorithms</td>
<td>147</td>
</tr>
<tr>
<td>What's happening?</td>
<td>147</td>
</tr>
<tr>
<td><strong>Configuration of portal navigation</strong></td>
<td>148</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>150</td>
</tr>
<tr>
<td><strong>Chapter 4: Forums, Categorization, and Asset Publishing</strong></td>
<td>151</td>
</tr>
<tr>
<td>Message Boards</td>
<td>152</td>
</tr>
<tr>
<td>Managing categories</td>
<td>153</td>
</tr>
<tr>
<td>Adding categories</td>
<td>153</td>
</tr>
<tr>
<td>Editing categories</td>
<td>155</td>
</tr>
<tr>
<td>Removing categories</td>
<td>156</td>
</tr>
<tr>
<td>Viewing RSS feeds</td>
<td>156</td>
</tr>
<tr>
<td>Managing threads</td>
<td>156</td>
</tr>
<tr>
<td>Adding threads</td>
<td>157</td>
</tr>
<tr>
<td>Editing threads</td>
<td>160</td>
</tr>
<tr>
<td>Removing threads</td>
<td>160</td>
</tr>
<tr>
<td>Viewing RSS feeds</td>
<td>161</td>
</tr>
<tr>
<td>Managing posts</td>
<td>161</td>
</tr>
<tr>
<td>Adding posts</td>
<td>161</td>
</tr>
<tr>
<td>Editing posts</td>
<td>162</td>
</tr>
<tr>
<td>Banning users</td>
<td>162</td>
</tr>
<tr>
<td>Deleting posts</td>
<td>163</td>
</tr>
<tr>
<td>Viewing posts</td>
<td>163</td>
</tr>
<tr>
<td>Searching posts</td>
<td>164</td>
</tr>
</tbody>
</table>
# Table of Contents

- Viewing my posts 164
- Viewing recent posts 164
- Viewing statistics 164
- Viewing banned users 165

**Subscribing to categories and threads** 166
- Unsubscribing from categories and threads 167
- What's happening? 167

**Customizing Message Boards** 168
- Setting up 168
  - What's happening? 171
  - Banning and unbanning users 172
  - Thread views 172
  - Using Message Boards as a mailing list 173
  - Message Boards in scope 173
  - The friendly URL 175
  - Archive, Export, and Import 175
  - Configuring portlets 177

- Assigning permissions 179
  - Site Administration | Content | Message Board | Messages 180
  - Site Administration | Content | Message Boards Category 182
  - Site Administration | Content | Message Boards Messages 185
  - Site Administration | Content | Message Boards Thread 186
  - Site Administration | Content | Message Boards General Permissions 186
  - Site Administration | Application | Message Board | Application Permissions 188

- Using Message Boards effectively 189
  - The category hierarchy 190
  - Semantics and ontology 191

**Categorization and tags** 191
- Tagging assets 191
- Folksonomies 192
- Taxonomies 193

- Tags administration 193
  - The Tags portlet 194
  - The Categories portlet 195
  - Configuring tags 198
  - Publishing tags 198

**Asset Publisher** 200
- Main features 200
- Configuration 201
  - Selecting assets manually 202
  - Selecting assets dynamically 206
  - Customization 207
  - What's happening? 208
    - A configurable look and feel 208

**Summary** 209
# Table of Contents

## Chapter 5: Understanding Wikis, Dynamic Data Lists, and Polls 211

### Understanding Wikis 212
- Managing nodes 212
  - Adding nodes in a Wiki 213
  - Editing a node 214
  - Remove a node 215
  - Viewing RSS feeds 215
  - Importing pages 215
- Managing pages 217
  - Adding pages 217
  - Viewing pages 221
  - Searching pages 223
  - Adding comments 224
  - Adding ratings 226
- Subscribing to nodes and Wiki pages 227
- Assigning permissions 227
  - Wiki Nodes 228
  - Wiki General Permissions 229
  - Wiki Node 230
  - Wiki Page 231
  - Application Permissions 232
  - Permissions on the Wiki portlet 233
- Using the Wiki portlet effectively 234
  - Understanding the characteristics of Wikis 234
  - Understanding the pros and cons of Wikis 234
  - Wiki uses 235
- Using Liferay wikis 235
  - Understanding the Creole mode 236
  - Understanding the HTML mode 237
  - Understanding the MediaWiki mode 237
- Configuration 237
  - Setting properties for Wikis 238
  - Wikis in scope 239
  - Wikis in communication 241
  - Enhancement 241
- Publishing wiki pages 242
  - Benefit of the Wiki Display portlet 243
  - Assigning permissions 244
  - Setting properties for the Wiki Display portlet 245

### Converting documents with OpenOffice 246
- Integrating OpenOffice 246
- Configuring OpenOffice 247
- Properties settings for OpenOffice 248
- Converting documents 248

### Dynamic Data List 248
- Creating new Dynamic Data List 249
Table of Contents

Adding a new record 252
Viewing data in Dynamic Data List 252
Editing the data 253
Dynamic Data List Display 253
Assigning permissions 255
  Site Administration | Content | Dynamic Data List | Lists 255
  Site Administration | Content | Dynamic Data List | Dynamic Data Lists Record Set 256
  Site Administration | Content | Dynamic Data List | General Permissions 256
  Site Administration | Applications | Dynamic Data List Display |
  Application Permissions 257

Understanding Polls 258
  The Polls portlet 258
    Editing a question 260
    Deleting a question 260
    Viewing votes 260
    Setting properties for Polls 261
    Features of Polls portlets 261
  The Polls Display portlet 262
    Setting properties for the Poll Display portlet 263
    Features of the Polls Display portlet 263
Assigning permissions 264
  Poll Questions 264
  Polls Question 265
  Polls | General Permissions 267
  Site Administration | Applications | Polls Display | Application Permissions 267

Using polls effectively 267
  Understanding Polls versus surveys 268
  Understanding Polls in scope 269
  Using Polls through JSON services 270

Summary 270

Chapter 6: Blogs, WYSIWYG Editors, and Social Networking 271

Exploring WYSIWYG editors 272
  Upgrading CKEditor 273
  End user features 274
  Inserting images from CKEditor 276
    Configuring CKEditor 278
  Inserting links to content 280
    Linking text to documents 281
    Linking text to pages 281
    Configuring resource types 282

Understanding RSS 283
  The RSS portlet 284
  Configuring RSS 286
  Understanding announcements and alerts 287
    Managing entries 287
### Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Editing a site</td>
<td>341</td>
</tr>
<tr>
<td>Deleting a site</td>
<td>342</td>
</tr>
<tr>
<td>Creating and managing pages</td>
<td>342</td>
</tr>
<tr>
<td>Viewing pages</td>
<td>342</td>
</tr>
<tr>
<td>Updating the look and feel of pages</td>
<td>349</td>
</tr>
<tr>
<td>Uploading a logo</td>
<td>350</td>
</tr>
<tr>
<td>Merging pages</td>
<td>351</td>
</tr>
<tr>
<td>SEO</td>
<td>351</td>
</tr>
<tr>
<td>Site templates and page templates</td>
<td>352</td>
</tr>
<tr>
<td>Creating page templates</td>
<td>353</td>
</tr>
<tr>
<td>Creating site templates</td>
<td>355</td>
</tr>
<tr>
<td>Bringing users into sites</td>
<td>360</td>
</tr>
<tr>
<td>Assigning users</td>
<td>360</td>
</tr>
<tr>
<td>Assigning an organization</td>
<td>362</td>
</tr>
<tr>
<td>Assigning Groups</td>
<td>363</td>
</tr>
<tr>
<td>Assigning site roles to Users and User Groups</td>
<td>365</td>
</tr>
<tr>
<td>Creating teams</td>
<td>367</td>
</tr>
<tr>
<td>Assigning users to a team</td>
<td>368</td>
</tr>
<tr>
<td>Join</td>
<td>369</td>
</tr>
<tr>
<td>Leave</td>
<td>370</td>
</tr>
<tr>
<td>Requesting membership</td>
<td>370</td>
</tr>
<tr>
<td>Assigning permissions</td>
<td>374</td>
</tr>
<tr>
<td>Control Panel</td>
<td>Sites</td>
</tr>
<tr>
<td>Control Panel</td>
<td>Sites</td>
</tr>
<tr>
<td><strong>Advanced site settings</strong></td>
<td>377</td>
</tr>
<tr>
<td>Application Display Templates</td>
<td>381</td>
</tr>
<tr>
<td>Liferay Social Activity</td>
<td>385</td>
</tr>
<tr>
<td>Workflow Configuration</td>
<td>387</td>
</tr>
<tr>
<td>Mobile Device Families</td>
<td>389</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>393</td>
</tr>
<tr>
<td><strong>Chapter 8: Document and Media Management</strong></td>
<td>395</td>
</tr>
<tr>
<td><strong>Documents and Media</strong></td>
<td>396</td>
</tr>
<tr>
<td>Managing documents and media</td>
<td>397</td>
</tr>
<tr>
<td>Adding folders</td>
<td>399</td>
</tr>
<tr>
<td>Editing folders</td>
<td>401</td>
</tr>
<tr>
<td>Moving folders</td>
<td>402</td>
</tr>
<tr>
<td>Adding files</td>
<td>403</td>
</tr>
<tr>
<td>Editing files</td>
<td>406</td>
</tr>
<tr>
<td>Checkout and checkin</td>
<td>407</td>
</tr>
<tr>
<td>Adding a shortcut</td>
<td>409</td>
</tr>
<tr>
<td>Assigning permissions</td>
<td>410</td>
</tr>
<tr>
<td>General Permissions</td>
<td>411</td>
</tr>
<tr>
<td>Resource Permissions – documents</td>
<td>411</td>
</tr>
<tr>
<td>Documents and Media – configuration</td>
<td>414</td>
</tr>
<tr>
<td>Understanding the import and export of documents</td>
<td>419</td>
</tr>
<tr>
<td>Extra settings for the Documents and Media portlet</td>
<td>421</td>
</tr>
</tbody>
</table>
## Table of Contents

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Document types and metadata sets</strong></td>
<td>424</td>
</tr>
<tr>
<td><strong>The Media Gallery portlet</strong></td>
<td>426</td>
</tr>
<tr>
<td><strong>Enabling the workflow in Documents and Media</strong></td>
<td>428</td>
</tr>
<tr>
<td><strong>Liferay Sync</strong></td>
<td>430</td>
</tr>
<tr>
<td>Setting up Liferay Sync</td>
<td>430</td>
</tr>
<tr>
<td><strong>Liferay integration with Alfresco</strong></td>
<td>444</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>448</td>
</tr>
<tr>
<td><strong>Chapter 9: Web Content Management</strong></td>
<td>449</td>
</tr>
<tr>
<td><strong>Web Content</strong></td>
<td>450</td>
</tr>
<tr>
<td>Managing Web Content</td>
<td>451</td>
</tr>
<tr>
<td>Creating Web Content</td>
<td>452</td>
</tr>
<tr>
<td>Viewing Web Content</td>
<td>455</td>
</tr>
<tr>
<td>Editing Web Content</td>
<td>456</td>
</tr>
<tr>
<td>Localization</td>
<td>458</td>
</tr>
<tr>
<td>Adding folders</td>
<td>459</td>
</tr>
<tr>
<td>Moving Web Content</td>
<td>460</td>
</tr>
<tr>
<td>Structures and templates</td>
<td>461</td>
</tr>
<tr>
<td>Assigning permissions</td>
<td>468</td>
</tr>
<tr>
<td>Web Content configurations</td>
<td>472</td>
</tr>
<tr>
<td>Extra settings for Web Content</td>
<td>474</td>
</tr>
<tr>
<td>The export and import of Web Content</td>
<td>475</td>
</tr>
<tr>
<td>The Web Content Display portlet</td>
<td>478</td>
</tr>
<tr>
<td>The Web Content Search portlet</td>
<td>479</td>
</tr>
<tr>
<td>Scheduling Web Content</td>
<td>481</td>
</tr>
<tr>
<td>Staging page publication</td>
<td>482</td>
</tr>
<tr>
<td>Local Live staging</td>
<td>483</td>
</tr>
<tr>
<td>Remote Live staging</td>
<td>487</td>
</tr>
<tr>
<td>A workflow for Web Content</td>
<td>489</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>496</td>
</tr>
<tr>
<td><strong>Chapter 10: Marketplace, Social Office, and Audience Targeting</strong></td>
<td>497</td>
</tr>
<tr>
<td><strong>Marketplace</strong></td>
<td>498</td>
</tr>
<tr>
<td>Exploring Marketplace in the Liferay site</td>
<td>500</td>
</tr>
<tr>
<td>Exploring Marketplace through a Liferay instance</td>
<td>502</td>
</tr>
<tr>
<td>Creating and uploading apps in Marketplace</td>
<td>504</td>
</tr>
<tr>
<td>Portlets</td>
<td>505</td>
</tr>
<tr>
<td>Themes</td>
<td>505</td>
</tr>
<tr>
<td>Layout templates</td>
<td>505</td>
</tr>
<tr>
<td>Hook plugins</td>
<td>505</td>
</tr>
<tr>
<td>Web plugins</td>
<td>505</td>
</tr>
<tr>
<td>OSGi bundles</td>
<td>506</td>
</tr>
<tr>
<td>App Manager</td>
<td>506</td>
</tr>
</tbody>
</table>
# Table of Contents

## Liferay Social Office 506
- My Profile 508
- My Dashboard 510
- Social Office Configurations 512

## Targeting content to audiences 514
- Installing and uninstalling the Audience Targeting app 515
- User segment management 516
- Understanding User Segment rules 518
- Managing campaigns 519

## Search 520
- Faceted search 522
- Configuration of the Search portlet 523

## Summary 525

## Chapter 11: Server Administration 527

### Liferay server administrator 528
- Resources 528
- Log Levels 530
- Properties 531
- CAPTCHA 532
- Data Migration 532
- File Uploads 534
- Mail 534
- External services 534
  - Configuring ImageMagick 534
  - Configuring OpenOffice and LibreOffice 535
  - Configuring Xuggler 536
- Script 536
- Shutdown 537

### Portal Instances 538

### Custom Fields 539

### Performance tuning 540
- Memory 541
- Garbage collection 542
- Properties file changes 544
- Disabling unused servlet filters 545

### Content Delivery Network 546

### Liferay Connected Services 547
- Managing the server through the LCS site 552

### Liferay clustering 559
- A common database for multiple nodes 561
  - The read-writer database configuration 561
  - Database sharding 562
## Table of Contents

Documents and Media Library for all nodes 564  
Understanding the filesystem store 565  
Understanding the Liferay Advanced filesystem store 566  
Understanding the CMIS store 566  
Understanding JCR Store 566  
Understanding Amazon Simple Storage Service 567  

**Liferay 7 updates** 568  
User Personas 568  
Single-page Applications 569  
The Audience Targeting application 569  
The developer experience 570  
Advanced Liferay Mobile SDK 570  
Liferay Connected Services 570  

**Summary** 570  

**Index** 571
Preface

Liferay is one of the leading enterprise open source portals and has been named the leader in Gartner's Magic Quadrant for Horizontal Portals too. Liferay Portal is so flexible that it is in high demand when it comes to enterprise portal solutions.

To develop an intranet portal for an enterprise, Liferay is one of the best open source portal development platforms that has a large-scale graph for the developer to extend any component. Liferay also provides best-in-class support for integration with other applications.

In this book, we have explained easy steps to develop intranet and extranet portals for an organization. You may be a new, experienced, or advanced user of Liferay: this book is organized in such a way that you’ll find useful information to take away and apply it in your day-to-day work to develop portals. If you are a Liferay Portal administrator, you will find this book useful to maintain the portal server and keep it running smoothly.

This book covers Liferay features in detail, including new features of Liferay, such as Liferay Sync, Liferay Marketplace, Recycle Bin, Liferay Connected Services, Audience Targeting, and so on. This will help you to integrate Liferay with other key applications, such as LDAP, SSO, and Alfresco 4.x and above. This book has numerous practical examples that will help you to develop an intranet portal on the fly. Most importantly, after going through each chapter, you will be able to understand and develop an intranet portal on your own.

Integration between different applications, such as LDAP, SSO, and Liferay Social Office, with numerous illustrations, diagrams, clear step-by-step instructions, and practical examples with screenshots are provided.

By reading this book, you will understand Liferay and its advance features. There are numerous Tips and Notes to help you understand the discussed ideas better.
What this book covers

Chapter 1, *Introducing Liferay for Your Intranet*, provides an introduction to the Liferay Portal 6.2 architecture and framework and also briefly explains Liferay's out-of-the-box portlets and features.

Chapter 2, *Setting Up a Home Page and Navigation Structure for the Intranet*, provides the reader with detailed, step-by-step instructions for the installation of the Liferay Portal server. It also explains the navigation structure for the portal page and helps to understand the different controls/actions for making the portal work for an enterprise.

Chapter 3, *Bringing in Users*, teaches you the creation of users and managing the users in the portal. It explains different terms, such as Organization, Site, User Groups, and Roles, in brief. It also provides the steps to configure portal settings.

Chapter 4, *Forums, Categorization, and Asset Publishing*, provides a detailed explanation of forums (Message Boards), Categorization, Tags, and Asset Publisher. It takes you through the steps to create and manage forums. It also covers categorization and tagging to help you manage the content in your portal. Finally, it provides step-by-step instructions to configure Asset Publisher.

Chapter 5, *Understanding Wikis, Dynamic Data Lists, and Polls*, teaches you about the Wiki, Dynamic Data List, and Polls portlets. It helps you with the creation of a wiki page and also allows you to manage the wiki for the portal. It even teaches you how to create a dynamic data list for your departments. Finally, it briefs you how the Polls portlet works and how you can implement it in your intranet portal.

Chapter 6, *Blogs, WYSIWYG Editors, and Social Networking*, explains how to create and manage blogs in the intranet portal. It also explains the WYSIWYG editor features and helps you to configure a different look and feel for your intranet portal. This chapter also explains the social networking portlets available within Liferay and how you can make use of all the portlets in creating social networking integrations into your intranet portal.

Chapter 7, *Understanding Sites*, provides the detailed discussion on Site. It helps you understand the site and how you can manage the site with different settings and controls provided for the site administrator. This chapter describes the advanced settings for the site, such as Application Display Templates, Social Activity, Workflow configurations, and Mobile Device families.
Chapter 8, Document and Media Management, teaches you about documents and media in detail. Here, you will learn about all the features of documents and media and how you can implement it in your enterprise intranet portal. It briefs you on Liferay Sync, which allows you to sync the Liferay document and media files in your local filesystem and access them through mobile devices too.

Chapter 9, Web Content Management, briefs you about the web content management system. This chapter guides you in creating and managing the web content for your intranet portal. Its also covers advanced topics, such as the staging page and publication, which allows you to publish the ready page to live production after you have formatted it in the staging environment.

Chapter 10, Marketplace, Social Office, and Audience Targeting, provides a detailed discussion on Liferay Marketplace, Liferay Social Office, and Audience Targeting, which are new features provided by Liferay.

Chapter 11, Server Administration, teaches you about server and portal administration, performance tuning, Liferay Connected Services, and Liferay Clustering. This chapter will teach you how to manage the Liferay Portal server and manage multiple instances. You will learn about the custom fields and their creation. It will also take you through Liferay Connected Services, which helps you to monitor the server and keep an eye on any fix update from Liferay through https://lcs.liferay.com. You will also learn how to create clustering for your Liferay server instance. Finally, it will update you on the new features in Liferay 7.

What you need for this book
Basically, to run the Liferay server, you need to have Java running on your local system. Secondly, you need to download Liferay Tomcat Server CE (liferay-portal-6.2-ce-ga2) from the SourceForge site http://sourceforge.net/projects/lportal/files/Liferay%20Portal/. Also, in your local system, you should have the MySQL database server running. For more details on the Liferay setup, refer to Chapter 2, Setting Up a Home Page and Navigation Structure for the Intranet.
Who this book is for

*Liferay Portal 6.2 Enterprise Intranets* is for everyone who is interested in Liferay Portal. This book is for beginners, intermediate, and advanced portal developers who need to create enterprise intranet portals for the business. It will be handy for IT professionals who already know the concepts of portal technologies and need to learn advanced integrations for different open source technologies with Liferay. It is also useful for experienced Liferay Portal developers and Liferay architects as it explains the various technologies used in Liferay Portal.

Conventions

In this book, you will find a number of styles of text that distinguish between different kinds of information. Here are some examples of these styles, and an explanation of their meaning.

Code words in text, database table names, folder names, filenames, file extensions, pathnames, dummy URLs, user input, and Twitter handles are shown as follows: "Suppose we have a set of variables, where $PORTAL_VERSION represents the current portal version and $LIFERAY_PORTAL represents the working folder containing the portal that we are planning to install."

A block of code is set as follows:

```
terms.of.use.journal.article.group.id=$ARTICLE_GROUP_ID
terms.of.use.journal.article.id=$ARTICLE_ID
```

When we wish to draw your attention to a particular part of a code block, the relevant lines or items are set in bold:

```
permissions.checker=com.liferay.portal.security.permission.AdvancedPermissionChecker
```

Any command-line input or output is written as follows:

```
$LIFERAY_HOME=$LIFERAY_PORTAL/liferay-portal-$PORTAL_VERSION
```
New terms and important words are shown in bold. Words that you see on the screen, in menus or dialog boxes for example, appear in the text like this: "In the Liferay 6.2 control panel, under the Apps | Store link section, you will see apps that are stored in the Marketplace portlet."

Warnings or important notes appear in a box like this.

Tips and tricks appear like this.

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Introducing Liferay for Your Intranet

Liferay is an enterprise application solution. It provides a lot of functionalities, which helps an organization to grow and is a one-solution package as a portal and content management solution. This book will help you to create an organization intranet portal solution with Liferay. In this chapter, we will look at the following topics:

• The complete features you want your organization's intranet solution to have by the time you reach the end of this book
• Reasons why Liferay is an excellent choice to build your intranet
• Where and how Liferay is used besides intranet portals
• Easy integration with other open source tools and applications
• Getting into more technical information about what Liferay is and how it works

So, let's start looking at exactly what kind of site we're going to build in this book.

Liferay Portal makes life easy

Over the course of this book, we're going to build a complete corporate intranet solution using Liferay. Let's discuss some of the features your intranet portal will have.

Hosted discussions

Are you still using e-mail for group discussions? Then, it's time you found a better way! Running group discussions over e-mail clogs up the team's inbox—this means you have to choose your distribution list in advance, and that makes it hard for team members to opt in and out of the discussion.
Introducing Liferay for Your Intranet

Using Liferay, we will build a range of discussion boards for discussion within and between teams. The discussions are archived in one place, which means that it's always possible to go back and refer to them later.

On one level, it's just more convenient to move e-mail discussions to a discussion forum designed for the purpose. But once the forum is in place, you will find that a more productive group discussion takes place here than it ever did over e-mail.

**Collaborative documents using wikis**

Your company probably has guideline documents that should be updated regularly but swiftly lose their relevance as practices and procedures change. Even worse, each of your staff will know useful, productive tricks and techniques—but there's probably no easy way to record that knowledge in a way that is easy for others to find and use.

We will see how to host wikis within Liferay. A wiki enables anybody to create and edit web pages and link all of those web pages together without requiring any HTML or programming skills. You can put your guideline documents into a wiki, and as practices change, your frontline staff can quickly and effortlessly update the guideline documentation.

Wikis can also act as a shared notebook, enabling team members to collaborate and share ideas and findings and work together on documents.

**Team and individual blogs**

Your company probably needs frequent, chronological publications of personal thoughts and web links in the intranet. Your company probably has teams and individuals working on specific projects in order to share files and blogs about a project process and more. By using the Liferay Blog features, you can use HTML text editors to create or update files and blogs and to provide RSS feeds.

Liferay provides an easy way for teams and individuals to share files with the help of blogs. Blogs provide a straightforward blogging solution with features such as RSS, user and guest comments, browsable categories, tags and labels, and a rating system. Liferay's RSS with the subscription feature provides the ability to frequently read RSS feeds from within the portal framework. We will see the detailed features of Liferay Blog in *Chapter 6, Blogs, WYSIWYG Editors, and Social Networking*.

At the same time, *What You See Is What You Get* (WYSIWYG) editors provide the ability to edit web content, including the blogs' content. Less technical people can use the WYSIWYG editor instead of sifting through complex code.
Shared calendars

Many companies require calendar information and share the calendar among users from different departments.

We will see how to share a calendar within Liferay. The shared calendar can satisfy the basic business requirements incorporated into a featured business intranet, such as scheduling meetings, sending meeting invitations, checking for attendees’ availability, and so on. Therefore, you can provide an environment for users to manage events and share calendars. We will see the details of calendar features in future chapters.

Document management – CMS

When there is a need for document sharing and document management, Liferay’s Documents and Media library helps you with lots of features.

The Documents and Media portlet allows you to add folders and subfolders for documents and media files, and also allows users to publish documents. It serves as a repository for all types of files and makes Content management systems (CMSes) available for intranets. The Documents and Media library portlet is equipped with customizable folders and acts as a web-based solution to share documents and media files among all your team members—just as a shared drive would. All the intranet users will be able to access the files from anywhere, and the content is accessible only by those authorized by administrators. All the files are secured by the permission layer by the administrator.

Web content management – WCM

Your company may have a lot of images and documents, and you may need to manage all these images and documents as well. Therefore, you require the ability to manage a lot of web content and then publish web content in intranets.

We will see how to manage web content and how to publish web content within Liferay. Liferay Journal (Web Content) not only provides high availability to publish, manage, and maintain web content and documents, but it also separates content from the layout. Liferay WCM allows us to create, edit, and publish web content (articles). It also allows quick changes in the preview of the web content by changing the layout. It has built-in functionality, such as workflow, search, article versioning, scheduling, and metadata.
Introducing Liferay for Your Intranet

Personalization and internalization
All users can get a personal space that can be either made public (published as a website with a unique, friendly URL) or kept private. You can also customize how the space looks, what tools and applications are included, what goes into Documents and Media, and who can view and access all of this content.

In addition, Liferay supports multiple languages, where you can select your own language. Multilingual organizations get out-of-the-box support for up to 45 languages. Users can toggle among different language settings with just one click and produce/publish multilingual documents and web content. Users can make use of the internalization feature to define the specific site in a localized language.

Workflow, staging, scheduling, and publishing
You can use a workflow to manage definitions, instances, and predetermined sequences of connected steps. Workflow can be used for web content management, assets, and so on. Liferay's built-in workflow engine is called Kaleo. It allows users to set up the review and publishing process on the web content article of any document that needs to end up on the live site. Liferay 6.2 integrates with the powerful features of the workflow and data capabilities of dynamic data lists in Kaleo Forms; it's only available in Liferay Enterprise Edition.

Staging environments are integrated with Liferay's workflow engine. To have a review process for staged pages, you need to make sure you have a workflow engine configured and you have a staging setup in the workflow. We will see how we can achieve the staging environment in Chapter 9, Web Content Management.

As a content creator, you can update what you've created and publish it in a staging workflow. Other users can then review and modify it. Moreover, content editors can make a decision on whether to publish web content from staging to live, that is, you can easily create and manage everything from a simple article of text and images to fully functional websites in staging and then publish them live.

Before going live, you can schedule web content as well. For instance, you can publish web content immediately or schedule it for publishing on a specific date.
Social networks and Social Office

Liferay Portal supports social networks—you can easily manage your Google Plus, Facebook, MySpace, Twitter, and other social network accounts in Liferay. In addition, you can manage your instant messenger accounts, such as AIM, ICQ, Jabber, MSN, Skype, YM, and so on smoothly from inside Liferay.

Liferay Social Office gives us a social collaboration on top of the portal—a fully virtual workspace that streamlines communication and builds up group cohesion. It provides holistic enhancement to the way you and your colleagues work together. All components in Social Office are tied together seamlessly, getting everyone on the same page by sharing the same look and feel. More importantly, the dynamic activity tracking gives us a bird's-eye view of who has been doing what and when within each individual site. Using Liferay Social Office, you can enhance your existing personal workflow with social tools, keep your team up to date, and turn collective knowledge into collective action. Note that Liferay 6.2 supports the Liferay Social Office 3.0 current version.

Liferay Sync and Marketplace

Liferay Sync is Liferay's newest product, designed to make file sharing as easy as a simple drag and drop! Liferay Sync is an add-on product for Liferay 6.1 CE, EE, and later versions, which makes it a more raw boost product and enables the end user to publish and access documents and files from multiple environments and devices, including Windows and MacOS systems, and iOS-based mobile platforms. Liferay Sync is one of the best features, and it is fully integrated into the Liferay platform. We will be go more in-depth in later chapters.

Liferay 6.1 introduced the new concept of the marketplace, which leverages the developers to develop any components or functionality and release and share it with other users. It's a user-friendly and one-stop place to share apps. Liferay Marketplace provides the portal product with add-on features with a new hub to share, browse, and download Liferay-compatible applications.

In Liferay 6.2, Marketplace comes under App Manager, where all the app-related controls can be possible. You will see this in more detail in the upcoming chapters.
More features
The intranet also arranges staff members into teams and sites, provides a way of real-time IM and chatting, and gives each user an appropriate level of access. This means that they can get all the information they need and edit and add content as necessary but won't be able to mess with sensitive information that they have no reason to see.

In particular, the portal provides an integrating framework so that you can integrate external applications easily. For example, you can integrate external applications with the portal, such as Alfresco, OpenX, LDAP, SSO CAS, Orbeon Forms, Konakart, PayPal, Solr, and so on.

In a word, the portal offers compelling benefits to today's enterprises—reduced operational costs, improved customer satisfaction, and streamlined business processes.

Everything in one place
All of these features are useful on their own. However, it gets better when you consider that all of these features will be combined into one easy-to-use searchable portal.

A user of the intranet, for example, can search for a topic—let's say financial report—and find the following in one go:

- Any group discussions about financial reports
- Blog entries within the intranet concerning financial reports
- Documents and files—perhaps the financial reports themselves
- Wiki entries with guidelines on preparing financial reports
- Calendar entries for meetings to discuss the financial report

Of course, users can also restrict their search to just one area if they already know exactly what they are looking for.

Liferay provides other features, such as tagging, in order to make it even easier to organize information across the whole intranet. We will do all of this and more over the course of the book.
Introducing Palm Tree Publications

In this book, we are going to build an intranet for a fictional company as an example, focusing on how to install, configure, and integrate it with other applications and also implement portals and plugins (portlets, themes, layout templates, hooks, and webs) within Liferay. By applying the instructions to your own business, you will be able to build an intranet to meet your own company’s needs.

"Palm Tree Publications" needs an intranet of its own, which we will call bookpub.com. The enterprise’s global headquarters are in the United States. It has several departments—editorial, website, engineering, marketing, executive, and human resources.

Each department has staff in the U.S., Germany, and India or in all three places.

The intranet site provides a site called "Book Street and Book Workshop" consisting of users who have an interest in reading books. The enterprise needs to integrate collaboration tools, such as wikis, discussion forums, blogs, instant messaging, mail, RSS, shared calendars, tagging, and so on.

Palm Tree Publications has more advanced needs too: a workflow to edit, approve, and publish books. Furthermore, the enterprise has a lot of content, such as books stored and managed alfresco currently.

In order to build the intranet site, the following functionality should be considered:

- Installing the portal, experiencing the portal and portlets, and customizing the portal and personal web pages
- Bringing the features of enabling document sharing, calendar sharing, and other collaboration within a business to the users of the portal
- Discussion forums—employees should be able to discuss book ideas and proposals
- Wikis—keeping track of information about editorial guidance and other resources that require frequent editing
- Dissemination of information via blogs—small teams working on specific projects share files and blogs about a project process
- Sharing a calendar among employees
- Web content management creation by the content author and getting approved by the publisher
- Document repository—using effective content management systems (CMSes), a natural fit for a portal for secure access, permissions, and distinct roles (such as writers, editors, designers, administrators, and so on)
Introducing Liferay for Your Intranet

- Collaborative chat and instant messaging, social network, Social Office, and knowledge management tools
- Managing a site named Book Street and Book Workshop that consists of users who have the same interest in reading books as staging, scheduling, and publishing web content related to books
- Federated search for discussion forum entries, blog posts, wiki articles, users in the directory, and content in both the Document and Media libraries; search by tags
- Integrating back-of-the-house software applications, such as Alfresco, Orbeon Forms, the Drools rule server, Jasper Server, and BI/Reporting Pentaho; strong authentication and authorization with LDAP; and single authentication to access various company sites besides the intranet site

The enterprise can have the following groups of people:

- **Admin**: This group installs systems, manages membership, users, user groups, organizations, roles and permissions, security on resources, workflow, servers and instances, and integrates with third-party systems
- **Executives**: Executive management handles approvals
- **Marketing**: This group handles websites, company brochures, marketing campaigns, projects, and digital assets
- **Sales**: This group makes presentations, contracts, documents, and reports
- **Website editors**: This group manages pages of the intranet—writes articles, reviews articles, designs the layout of articles, and publishes articles
- **Book editors**: This group writes, reviews, and publishes books and approves and rejects the publishing of books
- **Human resources**: This group manages corporate policy documents
- **Finance**: This group manages accounts documents, scanned invoices and checks accounts
- **Corporate communications**: This group manages external public relations, internal news releases, and syndication
- **Engineering**: This group sets up the development environment and collaborates on engineering projects and presentation templates
Introducing Liferay Portal's architecture and framework

Liferay Portal's architecture supports high availability for mission-critical applications using clustering and the fully distributed cache and replication support across multiple servers. The following diagram has been taken from the Liferay forum written by Jorge Ferrer. This diagram depicts the various architectural layers and functionalities of portlets:

![The Liferay architecture diagram](https://www.liferay.com/web/jorge.ferrer/blog/-/blogs/liferay-s-architecture-the-beginning-of-a-blog-series-site-blog)

Figure 1.1: The Liferay architecture

The preceding image was taken from [https://www.liferay.com/web/jorge.ferrer/blog/-/blogs/liferay-s-architecture-the-beginning-of-a-blog-series-site-blog](https://www.liferay.com/web/jorge.ferrer/blog/-/blogs/liferay-s-architecture-the-beginning-of-a-blog-series-site-blog)
Introducing Liferay for Your Intranet

The Liferay Portal architecture is designed in such a way that it provides tons of features at one place:

- **Frontend layer**: This layer is the end user’s interface
- **Service layer**: This contains the great majority of the business logic for the portal platform and all of the portlets included out of the box
- **Persistence layer**: Liferay relies on Hibernate to do most of its database access
- **Web services API layer**: This handles web services, such as JSON and SOAP

In Liferay, the service layer, persistence layer, and web services API layer are built automatically by that wonderful tool called **Service Builder**.

Service Builder is the tool that glues together all of Liferay’s layers and that hides the complexities of using Spring or Hibernate under the hood.

**Service-oriented architecture**

Liferay Portal uses **service-oriented architecture (SOA)** design principles throughout and provides the tools and framework to extend SOA to other enterprise applications. Under the Liferay enterprise architecture, not only can the users access the portal from traditional and wireless devices, but developers can also access it from the exposed APIs via REST, SOAP, RMI, XML-RPC, XML, JSON, Hessian, and Burlap.

Liferay Portal is designed to deploy portlets that adhere to the portlet API compliant with both JSR-168 and JSR-286. A set of useful portlets are bundled with the portal, including Documents and Media, Calendar, Message Boards, Blogs, Wikis, and so on. They can be used as examples to add custom portlets. In a word, the key features of Liferay include using SOA design principles throughout, such as reliable security, integrating the portal with SSO and LDAP, multitier and limitless clustering, high availability, caching pages, dynamic virtual hosting, and so on.

**Understanding Enterprise Service Bus**

**Enterprise Service Bus (ESB)** is a central connection manager that allows applications and services to be added quickly to an enterprise infrastructure. When an application needs to be replaced, it can easily be disconnected from the bus at a single point. Liferay Portal uses Mule or ServiceMix as ESB.
Through ESB, the portal can integrate with SharePoint, BPM (such as the jBPM workflow engine and Intalio | BPMS engine), BI Xforms reporting, JCR repository, and so on. It supports JSR 170 for content management systems with the integration of JCR repositories, such as Jackrabbit. It also uses Hibernate and JDBC to connect to any database. Furthermore, it supports an event system with synchronous and asynchronous messaging and a lightweight message bus.

Liferay Portal uses the Spring framework for its business and data services layers. It also uses the Spring framework for its transaction management. Based on service interfaces, portal-impl is implemented and exposed only for internal usage — for example, they are used for the extension environment. portal-kernel and portal-service are provided for external usage (or for internal usage) — for example, they are used for the Plugins SDK environment. Custom portlets, both JSR-168 and JSR-286, and web services can be built based on portal-kernel and portal-service.

In addition, the Web 2.0 Mail portlet and the Web 2.0 Chat portlet are supported as well. More interestingly, scheduled staging and remote staging and publishing serve as a foundation through the tunnel web for web content management and publishing.

Liferay Portal supports web services to make it easy for different applications in an enterprise to communicate with each other. Java, .NET, and proprietary applications can work together easily because web services use XML standards. It also supports REST-style JSON web services for lightweight, maintainable code and supports AJAX-based user interfaces.

Liferay Portal uses industry-standard, government-grade encryption technologies, including advanced algorithms, such as DES, MD5, and RSA. Liferay was benchmarked as one of the most secure portal platforms using LogicLibrary’s Logiscan suite. Liferay offers customizable single sign-on (SSO) that integrates into Yale CAS, JAAS, LDAP, NTLM, CA Siteminder, Novell Identity Manager, OpenSSO, and more. Open ID, OpenAuth, Yale CAS, Siteminder, and OpenAM integration are offered by it out of the box.

In short, Liferay Portal uses ESB in general with an abstraction layer on top of an enterprise messaging system. It allows integration architects to exploit the value of messaging systems, such as reporting, e-commerce, and advertisements.
Understanding the advantages of using Liferay to build an intranet

Of course, there are lots of ways to build a company intranet. What makes Liferay such a good choice to create an intranet portal?

It has got the features we need

All of the features we outlined for our intranet come built into Liferay: discussions, wikis, calendars, blogs, and so on are part of what Liferay is designed to do.

It is also designed to tie all of these features together into one searchable portal, so we won't be dealing with lots of separate components when we build and use our intranet. Every part will work together with others.

Easy to set up and use

Liferay has an intuitive interface that uses icons, clear labels, and drag and drop to make it easy to configure and use the intranet.

Setting up the intranet will require a bit more work than using it, of course. However, you will be pleasantly surprised by how simple it is—no programming is required to get your intranet up and running.

Free and open source

How much does Liferay cost? Nothing! It's a free, open source tool.

Here, being free means that you can go to Liferay's website and download it without paying anything. You can then go ahead and install it and use it. Liferay comes with an enterprise edition too, for which users need to pay. In addition, Liferay provides full support and access to additional enterprise edition plugins/applications.

Liferay makes its money by providing additional services, including training. However, the standard use of Liferay is completely free. Now you probably won't have to pay another penny to get your intranet working. Being open source means that the program code that makes Liferay work is available to anybody to look at and change. Even if you're not a programmer, this is still good for you:

- If you need Liferay to do something new, then you can hire a programmer to modify Liferay to do it.
- There are lots of developers studying the source code, looking for ways to make it better. Lots of improvements get incorporated into Liferay's main code.
- Developers are always working to create plugins—programs that work together with Liferay to add new features.
Probably, for now, the big deal here is that it doesn't cost any money. However, as you use Liferay more, you will come to understand the other benefits of open source software for you.

**Grows with you**

Liferay is designed in a way that means it can work with thousands and thousands of users at once. No matter how big your business is or how much it grows, Liferay will still work and handle all of the information you throw at it.

It also has features especially suited to large, international businesses. Are you opening offices in non-English speaking countries? No problem! Liferay has internationalization features tailored to many of the world's popular languages.

**Works with other tools**

Liferay is designed to work with other software tools—the ones that you're already using and the ones that you might use in the future—for instance:

- You can hook up Liferay to your LDAP directory server and SSO so that user details and login credentials are added to Liferay automatically
- Liferay can work with Alfresco—a popular and powerful Enterprise CMS (used to provide extremely advanced document management capabilities, which are far beyond what Liferay does on its own)

**Based on "standards"**

This is a more technical benefit; however, it is a very useful one if you ever want to use Liferay in a more specialized way.

Liferay is based on standard technologies that are popular with developers and other IT experts and that confer the following benefits on users:

- **Built using Java**: Java is a popular programming language that can run on just about any computer. There are millions of Java programmers in the world, so it won't be too hard to find developers who can customize Liferay.
- **Based on tried and tested components**: With any tool, there's a danger of bugs. Liferay uses lots of well-known, widely tested components to minimize the likelihood of bugs creeping in. If you are interested, here are some of the well-known components and technologies Liferay uses—Apache ServiceMix, Mule, ehcache, Hibernate, ICEfaces, Java J2EE/JEE, jBPM, Activiti, JGroups, Alloy UI, Lucene, PHP, Ruby, Seam, Spring and AOP, Struts and Tiles, Tapestry, Velocity, and FreeMarker.
• **Uses standard ways to communicate with other software:** There are various standards established to share data between pieces of software. Liferay uses these so that you can easily get information from Liferay into other systems. The standards implemented by Liferay include AJAX, iCalendar and Microformat, JSR-168, JSR-127, JSR-170, JSR-286 (Portlet 2.0), JSR-314 (JSF 2.0), OpenSearch, the Open platform with support for web services, including JSON, Hessian, Burlap, REST, RMI, and WSRP, WebDAV, and CalDAV.

• **Makes publication and collaboration tools Web Content Accessibility Guidelines 2.0 (WCAG 2.0) compliant:** The new W3C recommendation is to make web content accessible to a wide range of people with disabilities, including blindness and low vision, deafness and hearing loss, learning disabilities, cognitive limitations, limited movement, speech disabilities, photosensitivity, and combinations of these. For example, the portal integrates CKEditor-standards support, such as W3C (WAI-AA and WCAG), 508 (Section 508).

• **Alloy UI:** The Liferay UI supports HTML 5, CSS 3, and Yahoo! User Interface Library 3 (YUI 3).

• **Supports Apache Ant 1.8 and Maven 2:** Liferay Portal can be built through Apache Ant by default, where you can build services; clean, compile, and build JavaScript CMD; build language native to ASCII, deploy, fast deploy; and so on. Moreover, Liferay supports Maven 2 SDK, providing Community Edition (CE) releases through public maven repositories as well as Enterprise Edition (EE) customers to install maven artifacts in their local maven repository.

• **Bootstrap:** Liferay 6.2 provides support for Twitter Bootstrap out of the box. With its fully responsive UI, the benefit of bootstrap is that it will support any device to render the content. Even content authors can use bootstrap markup and styles to make the content nicer.

Many of these standards are things that you will never need to know much about, so don't worry if you've never heard of them. Liferay is better for using them, but mostly, you won't even know they are there.

### Other advantages of Liferay

Liferay isn't just for intranets! Users and developers are building all kinds of different websites and systems based on Liferay.
Corporate extranets
An intranet is great for collaboration and information sharing within a company. An extranet extends this facility to suppliers and customers, who usually log in over the Internet.

In many ways, this is similar to an intranet—however, there are a few technical differences. The main difference is that you create user accounts for people who are not part of your company.

Collaborative websites
Collaborative websites not only provide a secure and administrated framework, but they also empower users with collaborative tools, such as blogs, instant e-mail, message boards, instant messaging, shared calendars, and so on. Moreover, they encourage users to use other tools, such as tag administration, fine-grained permissions, delegable administrator privileges, enterprise taxonomy, and ad hoc user groups. By means of these tools, as an administrator, you can ultimately control what people can and cannot do in Liferay.

In many ways, this is similar to an intranet too; however, there are a few technical differences. The main difference is that you use collaborative tools simply, such as blogs, instant e-mail, message boards, instant messaging, shared calendars, and so on.

Content management and web publishing
You can also use Liferay to run your public company website with content management and web publishing.

Content management and web publishing are useful features in websites. It is a fact that the volume of digital content for any organization is increasing on a daily basis. Therefore, an effective CMS is a vital part of any organization. Meanwhile, document management is also useful and more effective when repositories have to be assigned to different departments and groups within the organization. Content management and document management are effective in Liferay. Moreover, when managing and publishing content, we may have to answer many questions, such as "who should be able to update and delete a document from the system?". Fortunately, Liferay's security and permissions model can satisfy the need for secure access and permissions and distinct roles (for example, writer, editor, designer, and administrator). Furthermore, Liferay integrates with the workflow engine. Thus, users can follow a flow to edit, approve, and publish content in the website.

Content management and web publishing are similar to an intranet; however, there are a few technical differences. The main difference is that you can manage content and publish web content smoothly.
Infrastructure portals

Infrastructure portals integrate all possible functions, as we stated previously. This covers collaboration and information sharing within a company in the form of collaborative tools, content management, and web publishing. In infrastructure portals, users can create a unified interface to work with content, regardless of source via content interaction APIs. Furthermore, using the same API and the same interface as that of the built-in CMS, users can also manage content and publish web content from third-party systems, such as Alfresco, Vignette, Magnolia, FatWire, Microsoft SharePoint, and so on.

Infrastructure portals are similar to an intranet; there are a few technical differences though. The main difference is that you can use collaborative tools, manage content, publish web content, and integrate other systems in one place.

Why do you need a portal? The main reason is that a portal can serve as a framework to aggregate content and applications. A portal normally provides a secure and manageable framework where users can easily make new and existing enterprise applications available. In order to build an infrastructure portal smoothly, Liferay Portal provides an SOA-based framework to integrate third-party systems.

Out-of-the-box portlets and features

Liferay provides out-of-the-box (OOTB) portlets that have key features and can be used in the enterprise intranet very efficiently. These portlets are very scalable and powerful and provide the developer with the tools to customize it very easily.

Let's see some of the most frequently used portlets in Liferay Portal.

Content management

Content management is a common feature in any web-based portal or website:

- The Web Content portlet has the features of full web publishing, office integration, and the asset library, which contains documents, images, and videos. This portlet also has the structure and templates that help with the designing of the web content's look and feel. Structure can be designed with the help of a visual editor with drag and drop. It has the integrated help feature with tooltips to name the attributes of the fields. You will see more details in Chapter 9, Web Content Management.
Chapter 1

• The **Asset Publisher** portlet provides you with the feature to select any type of content/asset, such as wiki pages, web content, calendar events, message board messages, documents, media documents, and many more. It also allows us to use filter on them by types, categories, tags, and sources. The display settings provide configurable settings, which helps the content to be displayed to the end users perfectly. In *Chapter 4, Forums, Categorization, and Asset Publishing*, you will see this in more detail.

• The **Document and Media** portlet is one of the most usable portlets to store any type of document. It allows you to store and manage your documents. It allows you to manage Liferay documents from your own machine's filesystem with the help of WebDAV integration. It has lots of new, built-in features, such as the inline document preview, image preview, and video player. Document metadata is displayed in document details, which makes it easier for you to review the metadata of the document. Also, Document and Media has features named **checkin** and **checkout** that helps editing the document in a group very easily. The Document and Media portlet has the multi-repository integration feature, which allows you to configure or mount any other repository very easily, such as SharePoint, Documentum, and Alfresco, utilizing the CMIS standard. In *Chapter 8, Document and Media Management*, you will come to know how to achieve such features in your corporate intranet.

**Collaboration**

Collaboration features are generally ways in which users communicate with each other, such as the ones shown in the following list:

• The **Dynamic data list** portlet provides you with the facility of not writing a single line of code to create the form or data list. Say, for example, your corporate intranet needs the job posting done on a daily basis by the HR administrator. The administrator needs to develop the custom portlet to fulfill that requirement. Now, the dynamic data list portlet will allow the administrator to create a form for job posting. It's very easy to create and display new data types. You will see more on this in *Chapter 5, Understanding Wikis, Dynamic Data Lists, and Polls*.

• The **Blog** portlet is one of the best features of Liferay. Blog portlets have two other related portlets, namely Recent Bloggers and Blogs Aggregator. The blog portlet provides the best possible ways for chronological publications of personal thoughts and web links in the intranet. Blog portlets can be placed for users of different sites/departments under the respective site//department page.
• The **Calendar** portlet provides the feature to create the event and schedule the event. It has many features that help the users in viewing the meeting schedule.

• The **Message Board** portlet is a full-featured forum solution with threaded views, categories, RSS capability, avatars, file attachments, previews, dynamic lists of recent posts, and forum statistics. Message Board portlets work with the fine-grained permissions and role-based access control model to give detailed levels of control to administrators and users. You will find more details about this in *Chapter 4, Forums, Categorization, and Asset Publishing*; you will see how to work on message boards.

• The **Wiki** portlet, like the Message Boards portlet, provides a straightforward wiki solution for both intranet and extranet portals that provides knowledge management among the users. It has all of the features you would expect in a state-of-the-art wiki. Again, it has the features of a file attachment preview, publishing the content, and versioning, and works with a fine-grained permission and role-based access control model. This again takes all the features of the Liferay platform. In *Chapter 5, Understanding Wikis, Dynamic Data Lists, and Polls*, you will find more about the Wiki portlet.

• The **Social Activity** portlet allows you to tweak the measurements used to calculate user involvement within a site. The contribution and participation values determine the reward value of an action. It uses the blog entry, wiki, and message board points to calculate the user involvement in the site.

• The **Marketplace** portlet is placed inside the control panel. It's a hub for the applications provided by Liferay and other partners. You can find that many applications are free, and for certain applications, you need to pay an amount. It's more like an app store. This feature was introduced in Liferay Version 6.1. In *Chapter 10, Marketplace, Social Office, and Audience Targeting*, it has been described in detail.

In the Liferay 6.2 control panel, under the **Apps** | **Store** link section, you will see apps that are stored in the Marketplace portlet. Liferay 6.2 comes with a new control panel that is very easy to manage for the portal's Admin users. We will discuss this in more detail in *Chapter 10, Marketplace, Social Office, and Audience Targeting*. **Liferay Sync** is not a portlet; it's a new feature of Liferay that allows you to synchronize documents of Liferay Document and Media with your local system. Liferay provide the **Liferay Sync** application, which has to be installed in your local system or mobile device. In *Chapter 8, Document and Media Management*, you can see detailed examples of Liferay Sync.
News

RSS portlets provide RSS feeds. RSS portlets are used for the publishers by letting them syndicate content automatically. They benefit readers who want to subscribe to timely updates from their favorite websites or to aggregate feeds from many sites into one place. A Liferay RSS portlet is fully customizable, and it allows you to set the URL from which site you would like to get feeds.

Social

Activities portlets display portal-wide user activity, such as posting on message boards, creating wikis, and adding documents to Documents and Media. There are more portlets for social categories, such as User Statistics portlets, Group Statistics portlets, and Requests portlets. All these portlets are used for the social media.

Tools

The Search portlet provides faceted search features. When a search is performed, facet information will appear based on the results of the search. The number of each asset type and the most frequently occurring tags and categories as well as their frequency will all appear in the left-hand side column of the portlet. It searches through Bookmarks, Blogs Entries, Web Content Articles, Document Library Files, Users, Message Board, and Wiki.

Finding more information on Liferay

In this chapter, we looked at what Liferay can do for your corporate intranet and briefly saw why it's a good choice.

If you want more background information on Liferay, the best place to start is the Liferay corporate website (http://www.liferay.com) itself. You can find the latest news and events, various training programs offered worldwide, presentations, demonstrations, and hosted trails. More interestingly, Liferay eats its own dog food; corporate websites within forums (called message boards), blogs, and wikis are built by Liferay using its own products. It is a real demo of Liferay Portal's software.

The Liferay website's wiki (http://www.liferay.com/web/guest/community/wiki) contains documentation, including a tutorial, user guide, developer guide, administrator guide, roadmap, and so on.


If you would like to file a bug or know more about the fixes in a specific release, then you must visit the bug-tracking system at http://issues.liferay.com/.

This book will tell you more about a new trend in the portal world with respect to user needs, functionalities, and what we can achieve with the Liferay Portal 6.2 features.

Summary
In this chapter, we looked at what Liferay can offer your intranet and what we should consider while designing the company's enterprise site. We saw that our final intranet will provide shared documents, discussions, collaborative wikis, and more in a single, searchable portal. Well, Liferay is a great choice for an intranet because it provides so many features and is easy to use, free and open source, extensible, and well-integrated with other tools and standards. We also saw the other kinds of sites Liferay is good for, such as extranets, collaborative websites, content management, web publishing, and infrastructure portals. For the best example of an intranet and extranet, you can visit www.liferay.com. It will provide you with more background information.

In the next chapter, we're going to install Liferay and continue building the intranet.
Setting Up a Home Page and Navigation Structure for the Intranet

This chapter will assist administrators and normal users with implementing a portal page with portlets, in the Palm Tree Publications enterprise. It will guide you through setting up the portal, building pages, setting up portal pages, and customizing portlets. It will also address the topic of navigating the structure of intranet websites. In addition, it will provide guidance on configuring the portals, as well as bringing pages together in action. And finally, it will show us how to share portlets within a portal page and how to configure the Control Panel settings through the properties file. By the end of this chapter, you will have learned the following:

- Using a portal page with portlets, basic knowledge about portlets, and how the portal works
- Setting up the portal, building pages, and setting up portal pages
- Customizing portlets
- Navigating the structure of the intranet
- Configuring the portal
- Bringing pages together in action
- Sharing portlets within a portal page
- Configuring the Control Panel
Experiencing the portal

Liferay provides unique interface for the portal. It makes the portal unique by providing everything customizable. The Palm Tree Publications enterprise administrator, say "Palm Tree", will experience the portal locally. After starting up the portal by typing the \texttt{http://localhost:8080} URL in a browser, you will able to see the Liferay Portal home page. Now, log in as "Palm Tree" Admin to see the portal page interface similar to the following screenshot. Generally speaking, a portal page is made up of a set of portlets—for example, \textbf{Web Content Display}, the navigation portlet, breadcrumb portlet, and the default pages.

![Guest home page](image)

Figure 2.1: Guest home page

The preceding screenshot is the default welcome page of Liferay Portal.
Getting portal pages

Suppose we have a set of variables, where $PORTAL_VERSION$ represents the current portal version and $LIFERAY_PORTAL$ represents the working folder containing the portal that we are planning to install. Logically, you can have a different folder name. But for simplicity, we will use a folder named Liferay-Portal. More specifically, you will have a value for $LIFERAY_PORTAL$—that is, C:\Liferay-Portal in Windows, and /Liferay-Portal in Linux, Unix, and Mac OS. In addition, we use a variable $LIFERAY_HOME$ to represent the current folder where the portal is installed. Therefore, we would have the following expression:

$LIFERAY_HOME=$LIFERAY_PORTAL/liferay-portal-$PORTAL_VERSION

In order to get the preceding portal page with portlets, install the portal in your local machine using the following steps:

1. Download the latest Liferay Portal Standard Edition bundled with Tomcat 7.x from the website http://www.liferay.com/downloads/liferay-portal/available-releases. It is a large file of about 291.1 MB. You have to wait for a while in order to download it.

2. Unzip the downloaded file into $LIFERAY_PORTAL$.

   Make sure that you have downloaded the latest version of JDK. It is available at http://www.oracle.com/technetwork/java/javase/downloads/jdk7-downloads-1880260.html for every OS.

3. You need to install JDK in your local machine and set the JAVA_HOME variable as well. Also, make sure that the MySQL database is running in your local system. This is the only thing you need in order to run the portal properly. Run $TOMCAT_AS_DIR/bin/startup.bat for Windows or $TOMCAT_AS_DIR/bin/startup.sh for Linux. Note that you may need to wait for about 60 seconds for it to start up.

4. Open your browser and type http://localhost:8080 if it doesn't open automatically. You will get the Basic Configuration wizard/interface, where you have to set up the Portal Name, Administrator User, and database setting. While you start with the portal pages, you'll have to set up the basic configuration or it will just take the default settings.

5. In the Basic Configuration wizard, keep the default settings. For the portal name, let's keep the default name Liferay, which is the guest site. We will be creating a new site Palm Tree, which will be called the Palm Tree portal.
Setting up the database is optional. If you don't select a specific database, Liferay will use the default database and map it to the **hypersonic database** automatically.

Create a database in MySQL with the database name `lportal`, before setting up the database configuration. You can use the MySQL command `create database lportal character set utf8;` for creating the database.

6. Now, click on the **Change** link below the database; the **Database** section will expand and you will able to set up the database settings.

![Figure 2.2: The basic configuration](image)

The preceding screenshot shows the basic configuration for the database.
7. In the database setup, you have to select the database vendor, that is, **MySQL** or any other database provider, and automatically, the respective JDBC class name and JDBC driver will be taken. You just need to pass the database name and the database username and password.

    For MySQL, the database URL must be like the following line of code, where `databaseName` will be say `lportal`:
    
    JDBC URL - `jdbc:mysql://localhost/<databaseName>?useUnicode=true&characterEncoding=UTF-8&useFastDateParsing=false`  

8. In the previous screenshot, we selected **MySQL** as the database. As **Administrator User**, you can set any user name such as Admin; by default, the user name is Test. For this example, let us take the **First Name** as Admin, **Last Name** as Admin, and **Email** as admin@liferay.com.

    Liferay comes with sample data (optional) for the portal; while configuring the portal, it will set up the sample data. But this is optional and if you don't want the sample data, you can uncheck the checkbox for sample data. Then finish the configuration.

9. Then click on **Finish Configuration**.

10. You will get a success message in the next page. Click on **Go to my Portal**.

11. Now the agreement page for terms and conditions appears; just click on the **I Agree** option. Then you need to change the password for the **Administrator User** which is Admin in our case. After that, answer the remainder questions on the page.

Consequently, you will see a portal interface like the one shown in the preceding screenshot. The portal page shows different content after you have logged in. It consists of portlets such as, **Web Content Display** portlet, a dock bar menu, navigation bar, and breadcrumb bar.
In Liferay 6.2, the look and feel of the portal has been changed with extensive use of responsive features and the Alloy User Interface (AUI) components.

Figure 2.3: The Dock bar menu

The preceding screenshot shows different actions in the dock bar menu.

The dock bar menu in Liferay 6.2 has been changed with a new look and improved functionality. The screenshot shows the three drop-down menus of the dock bar. Let's look at each of these links in detail:

- **Add** allows the user to add pages, content, and applications.
  - **Page**: This link allows the user to add a new page
  - **Content**: The user can add new content
  - **Applications**: This link allows the user to add a new application to the page

- **Preview** allows the user to preview the page in different resolutions (by customizing the size in pixels) and devices such as smartphones, tablets, desktops, and so on.

- **Edit** allows the user to edit all page-related settings or example:
  - **Page**: This allows editing of pages
  - **Page Layout**: This allows changing of the page layout

- **Edit control** helps the user to enable and disable the portlet configuration and settings.

- **Admin**:
  - **System Administration**: This link redirects to the Site Administrator Panel for site page and content. It has sublinks such as Pages, Content, Users, and Configuration. Clicking on any of these links will take you to the respective section in Site Administrator Panel. It works like the manage site content feature in Liferay 6.1
Chapter 2

- Control Panel: This link redirects to the Control Panel

- My Sites:
  - My public pages: This redirects to the public page of the site
  - My private pages: This redirects to the private page of the site

- User Avatar:
  - My Profile: This redirects to the user's public page
  - My Dashboard: This redirects to the user's private page
  - My Account: This pops up the user's My Account detail page and also provides the My Pages, My Workflow Tasks, and My Submissions options as tabs
  - Sign Out: This is a logout button to exit

Congratulations! You now have a running copy of the portal. The remainder of this section will explain what a portal is, and how to implement a portal page with a set of portlets.

What you have previously seen is a portal page with the name Welcome. The portal page has a dock bar menu, a logo, a navigation bar, a breadcrumb bar, a set of portlets, and a footer. When you have logged in, the portal will generate this page automatically.

An intranet website is made up of a set of pages such as Welcome. The portal can be used to build and manage these pages smoothly.

The working of the portal

The following is a typical sequence of events, initiated when you access a portal page, for example, the Welcome page in the portal:

- A client (for example, Liferay), after being authenticated, makes an HTTP request to the portal.
- The request is received by the portal (for example, the Liferay Portal).
- The portal determines if the request contains any kind of action targeted to the portlets; if not, it simply renders it on the page. For example, Web Content Display is associated with the portal page such as Liferay.
- If there is an action targeted to a portlet, for example, Web Content Display, then the portal requests the portlet container to invoke the portlet to process the action.
• The portal invokes portlets such as **Web Content Display**, and so on through the portlet container.

• The portal aggregates the output of portlets in the portal page and sends it to the client (for example, Liferay).

**Experiencing portlets**

A portal page is made up of a set of portlets. For example, the **Welcome** portal page contains portlets like the **Web Content Display** portlet, and others. Moreover, the **Web Content Display** portlet has many controls icons (such as **Look and Feel**, **Configuration**, **Export / Import**, **Maximize**, **Minimize**, and **Remove**), the **Move** icon and title.

Each portlet has control settings (**Gear** icon), as seen in the preceding screenshot.

Normally, a portlet is an application that provides a specific piece of content (such as information or a service) to be included as a part of a portal page. It is managed by a portlet container that processes requests and generates dynamic content. Actually, portlets are used by portals as pluggable user interface components that provide a presentation layer to information systems.

Loosely speaking, portlets are fragments of an HTML page—pieces of markup (such as HTML, XHTML, WML, and so on). The content of a portlet is normally aggregated with the content of other portlets to form the portal page. The life cycle of a portlet is managed by the portlet container. The content generated by a portlet may vary from one user to another, depending on the user's configuration for the portlet.
The portal comes with several useful bundled portlets and also fully supports JSR-168 / JSR-286 standards, which allow the portal to deploy third-party portlets.

**What's JSR-168 and JSR-286?**

**Using the portlet container**
The **Web Content Display** portlet runs in the portal page. It requires a runtime environment, that is, a portlet container.

Generally, a portlet container provides portlets with persistent storage for preferences and the required runtime environment. A portlet container manages a portlet's life cycle and receives requests from the portal to execute requests on the portlets. A portlet container is mostly the responsibility of the portal handling the aggregation.

Portlet applications are responsible for providing the user interface of the portal by accessing distinct applications, systems, or data sources and for generating markup fragments to present the content to the portal users.

**The life cycle of a portlet**
A portlet has a life cycle that defines how it is loaded, instantiated, and initialized, as well as how it handles requests from clients, and how it's taken out of service. The life cycle of a portlet includes the `Init()`, `processAction()`, `render()`, and `destroy()` methods of the portlet interface, as shown in the following figure:

- **Loading and instantiation**: The loading and instantiation can occur when the portlet container starts the portlet application, or it can be delayed until the portlet container determines that the portlet needs to service a request.
- **Initialization**: Portlets can initialize resources and perform other one-time activities.
- **Request handling**: The portlet container may invoke the portlet to handle client requests. The portlet handling request can be an action request, event request, or a render request.
• **Requests**: These are the `processAction` method and the `render` method, as shown in the next figure. Generally speaking, during a render request, portlets such as language generate content based on their current state.

• **End of service**: When the portlet container determines that a portlet should be removed from service, it calls the `destroy` method of the portlet interface in order to allow the portlet to release any resource it is using and save any persistent state.

![Portal 2.0 lifecycle](image)

**Figure 2.5: Portlet life cycle**

In the preceding figure, you can see the portlet 2.0 life cycle, along with an explanation on the flow of each process. In JSR 286, that is portlet 2.0, a few methods have been introduced to make the portlet application more robust. For more information, you can refer to the JSR 286 official documentation.
Let's suppose that there are three portlets in a portal page: A, B, and C. Now suppose that the end user initiates an action on the page, which demands that the content of the portlets A, B, and C to be modified. The processes that take place during the interaction are illustrated in the following sequence diagram:

The portlet sequence diagram illustrates the processes that take place during interactions between users and portlets.
Terminologies, scope, and hierarchy within the portal

We have discussed portal, pages, and portlets. What are the relationships between them? Let's take a high-level overview of the terminologies, scope, and hierarchy within the portal. As shown in next figure, the portal is implemented by portal instances. The portal can manage multiple portal instances in one installation. Of course, you can install multiple portal instances in multiple installations, separately.

![Figure 2.7: Portal-Group-Page-Content](image)

The portal as a whole, broken down into different layers, is shown in the preceding figure.

Each portal instance can have many groups, which may be implemented as organizations, sites, user groups, and users. Note that each user can be represented as a group by itself. For example, if a user is a power user, then the user will have access to public pages and private pages, like any other group. Here, we can use the term organization to represent organizations (or locations), sites, user groups, and users (only one user in a group). Each portal instance has complete isolation of the users, organizations, locations, and user groups. There is a hierarchy in organizations, for example, the parent organization, child organizations, and locations.

Each group has two sets of pages (that is public and private, called portal pages) implemented as layouts. There is a hierarchy in layouts, for example, parent pages and child pages.

Each page may contain different content implemented as portlets. Therefore, the content will have different scopes. For example, the content would be scoped into a page, group, portal instance, or portal. This pattern is called Portal-Group-Page-Content.
Note that from Liferay 6.1 onwards, the Communities have been named as Sites.

Setting up the portal
As an administrator at the enterprise Palm Tree Publications, you will need to undertake many administrative tasks such as installing the portal, installing and setting up databases, and so on.

You can install the portal in different ways based on your needs. Normally, there are three main installation options:

- **Using an open source bundle**: The easiest and fastest installation method is to install the portal as a bundle. By using a Java SE runtime environment with an embedded database (that is, hypersonic database), you can simply unzip and run the bundle just as we had done in the beginning. You may configure the database and other settings by using the Basic Configuration wizard.

- **Detailed installation procedure**: You can install the portal in an existing application server. This option is available for all the supported application servers.

We will consider the second installation option, *the detailed installation procedure*, later. In the previous section, we have used the first installation option.

Installing Liferay on an existing application server
We will be installing Liferay Portal using its .war file on an existing application server. Liferay supports a wide combination of application servers and databases.

1. Download the liferay-portal-6.2-ce...war and liferay-portal-dependencies-6.2-ce...zip files.
2. Check and undeploy any application listening at the root (/) of the server.
3. Make sure that the application server is down.
4. Unzip the dependencies to the global classpath of your server so that both Liferay and the plugins can access them.
5. Deploy the Liferay .war file and start the application server.

Let us assume that the database installed in your system is MySQL, and that the database has already been created. Your application server is already installed and running successfully.
Setting Up a Home Page and Navigation Structure for the Intranet

Note that Liferay uses the UTF-8 character encoding. So, make sure that your application server has the Java-Dfile.encoding=UTF-8 parameter set before you proceed. Different application servers have different setting for this parameter.

Using the Liferay Portal bundled with GlassFish 3.1.x in Windows

Firstly, let's consider one scenario—you, as an administrator, need to install the portal in Windows with a MySQL database, and your local Java version is Java SE 7.0. Let us install the portal, bundled with GlassFish 3.1.x in Windows, through the following steps:

2. Unzip the downloaded file into $LIFERAY_PORTAL.
3. Now start the server by running start serv.bat, which is located at C:\Liferay_Home\liferay-portal-6.1.1-ce-ga2\glassfish-3.1.2\bin.
4. Create a database named lportal in MySQL as follows:
   ```
   drop database if exists lportal;
   create database lportal character set utf8;
   ```
5. You need to wait for couple of minutes to start the server. Once the server is running, type http://localhost:8080 in the browser if it doesn't open automatically. You will get the Basic Configuration wizard/interface, where you have to setup the Portal Name, Administrator User, and database setting. As you start with the portal pages, you will have to set up the basic configuration, or it will just take the default settings. You can refer to the Figure 2.2.
6. After setting up the basic configuration, click on Finish. You will be redirected to the confirmation page, where you should click on Go to my portal.
7. Now you have to change the password for the Administrator User, that is, Admin in our case. Answer the remaining questions. And last, but not the least, when the terms and conditions Agreement page appears, just click the I Agree option.
If you have already set up the database that you want to map with your portal instance, you can set your existing its details of in the Basic configuration.

If you don't want the Basic Configuration wizard to appear, just disable it by adding the `setup.wizard.enabled=false` setting in `portal-ext.properties`. You will need to create the `portal-ext.properties` file under `$LIFERAY_HOME` or at `$TOMCAT_HOME/webapps/ROOT/WEB-INF/classes`. Note that you should only have one file in either location.

**Using Liferay Portal bundled with Tomcat 6.x in Linux**

Let's consider another scenario in which you, as an administrator, need to install the portal in Linux with a MySQL database, and your local Java version is JDK 6.0. Let's install the portal bundled with Tomcat 6.x in Linux as follows:

2. Unzip the downloaded file into `$LIFERAY_PORTAL`.
3. Configure the database details in the `portal-ext.properties` file.
4. Create a database `lportal` and an account `root/root` in MySQL as follows:
   ```sql
   drop database if exists lportal;
   create database lportal character set utf8;
   grant all on lportal.* to 'root'@'localhost' identified by 'root' with grant option;
   grant all on lportal.* to 'root'@'localhost.localdomain' identified by 'root' with grant option;
   ```
5. Add the following lines at the end of `portal-ext.properties`.
   ```properties
   ## MySQL
   jdbc.default.driverClassName=com.mysql.jdbc.Driver
   jdbc.default.url=jdbc:mysql://localhost:3306/lportal?useUnicode=true&characterEncoding=UTF-8&useFastDateParsing=false
   jdbc.default.username=root
   jdbc.default.password=root
   ```
6. If you don't want to go through the basic configuration wizard, then paste the following line in portal-ext.properties:

   setup.wizard.enabled=false

This will disable the basic configuration.

7. Run $TOMCAT_AS_DIR/bin/startup.sh. Note that you may need to wait for about 60 seconds for it to start up.

8. Open your browser, and type http://localhost:8080 if it doesn't open automatically. Now you will not get the basic configuration wizard/interface.

9. Now you have to change the password for the Administrator User to Admin. After that, answer the remaining questions. When the terms and conditions agreement page appears, just click on the I Agree option.

10. You have successfully installed Tomcat in Linux.

Note that JAVA_HOME should be set before you run the server.

Setting up production servers
If the portal was used for production, then you may need to reset the JVM parameters as follows:

1. Locate the setenv.sh file in $TOMCAT_AS_DIR/bin.

2. Remove all current lines, and add the following lines in the setenv.sh file:

   JAVA_OPTS="$JAVA_OPTS -Xms2048m -Xmx2048m -XX:MaxPermSize=1024m -Dfile.encoding=UTF8 -Duser.timezone=GMT -Djava.security.auth.login.config=$CATALINA_HOME/conf/jaas.config -Dorg.apache.catalina.loader.WebappClassLoader.ENABLE_CLEAR_REFERENCES=false"

The previous code shows the JVM parameters and reasonable values for a production environment.
Setting up domains

Additionally, if the portal was used for production, you may need to test the domain (a real domain or a virtual domain) instead of localhost. As mentioned earlier, we can type the URL http://www.bookpub.com:8080 in a browser. How to make it happen?

1. Locate the hosts file in the etc folder and open it. Note that in a Windows environment, the etc folder would be something like C:/Windows/System32/drivers/etc.

2. Add the following line at the end of the host file and save it:

   127.0.0.1 www.bookpub.com

The preceding code maps the IP address 127.0.0.1 to the domain www.bookpub.com. Note that you should use the real IP address of your production system and the real domain. Therefore, a portal with a real domain name in this box will be available on the Internet.

Shortening the URL

As you can see, there is a port number 8080 in the URL. You may want to remove the port number and make the URL shorter to something like http://www.bookpub.com. You can do this by following these steps:

1. Locate server.xml at $TOMCAT_AS_DIR/conf and open it.

2. Replace the port number 8080 with 80 and save it. Make sure you don't have any other processes running on port 80 such as the Apache server.

3. The preceding code resets the port number. Normally, the number 80 gets hidden in the URL. This is an option we can use to shorten the URL. There are other options that we can use to make the URL even shorter, such as friendly URL mapping and virtual hosting. These options will be addressed in the coming chapters.

More options for portal installation

You can use one of following options for servlet containers and full Java EE application servers in order to install the Liferay Portal:

- Bundled with Geronimo: liferay-portal-geronimo-6.2-ce-ga2
- Bundled with GlassFish 3: liferay-portal-glassfish-6.2-ce-ga2
- Bundled with JBoss: liferay-portal-jboss-6.2-ce-ga2
- Bundled with Jetty: liferay-portal-jetty-6.2-ce-ga2
Setting Up a Home Page and Navigation Structure for the Intranet

- Bundled with Resin: liferay-portal-resin-6.2-ce-ga2
- Bundled with Tomcat 7.x: liferay-portal-tomcat-6.2-ce-ga2

You can choose the preferred bundle according to your requirements, and directly download it from the official download page (refer to http://www.liferay.com/downloads/liferay-portal/available-releases). The examples in this book are based on the Liferay Portal bundled with Tomcat 7.x and GlassFish 3.

A flexible deployment matrix

As an administrator, you can install Liferay Portal on all major application servers, databases, and operating systems. There are over 700 ways to deploy Liferay Portal. Therefore, you can reuse your existing resources, stick with your budget, and get an immediate return on an investment that everyone will be happy with. In general, you can install the portal on Mac, Linux, Unix, or Windows with any one of the following application servers (or servlet containers), and by selecting any one of the following database systems:

<table>
<thead>
<tr>
<th>Application server</th>
<th>Borland ES, Apache Geronimo, Sun GlassFish 2 URI, JBoss, JOnAS, JRun 4 Updater, Oracle AS, Orion, Pramati, RexIP, SUN JSAS, WebLogic, WebSphere, Jetty, Resin, Tomcat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database</td>
<td>Apache Derby, IBM DB2, Firebird, Hypersonic, H2 (Hypersonic 2), Informix, InterBase, JDataStore, MySQL, Oracle, PostgreSQL, SAP, SQL Server, Sybase</td>
</tr>
<tr>
<td>Operating system</td>
<td>LINUX (Debian, RedHat, SUSE, Ubuntu, and so on.), Unix (AIX, FreeBSD, HP-UX, OS X, Solaris, and so on), Windows, and Mac OS X</td>
</tr>
</tbody>
</table>

Building the Palm Tree Publications site

Let's create a site for our example with the name Palm Tree, which will help us understand the portal concept clearly.

Follow these steps to create a new site:

1. Click on the Admin link; a drop-down menu will appear (see Figure 2.3).
2. Click on Control Panel and select Sites.
3. Now, click on Add and select Blank Site.

4. Fill in the site name and site description keeping all other settings default. We will be discussing this in detail in the coming chapters.

5. Finally, click on the Save button. The Palm Tree site is created successfully and it will redirect to the site admin page.

![Control Panel sites](image)

The preceding screenshot shows the list of sites displayed by the Sites section in the Control Panel.

6. Now create a page for the site. Click on the Pages link and select Site Pages from the drop-down menu on the left-hand side. Under Public page, add a new page with the name Home. See the detailed steps given in the following section.

Finally, you have created the Palm Tree site with the Home page.

**Building pages**

As a Palm Tree administrator of the enterprise Palm Tree Publications, you may be expected to build more pages like the home page that you see when you are signed-in by default.
Generally, the pages could be public pages or private pages of different sites. Before building a page, you must take a look at the dock bar menu. As shown in following screenshot, you can see some items in the dock bar menu under **My Sites**:

![Figure 2.9: The Palm Tree site](image)

Finally, after the entire configuration, the **Home** page of Palm Tree gets loaded.

As you might have noticed, while setting **Basic Configuration**, we have set the portal name as **Liferay**. Under **My Sites**, you will see the list of active sites; **Liferay** and **Palm Tree** are the current active sites.

As you can see, every user will have his/her own public pages and private pages. Furthermore, you will see a set of pages with a set of portlets in both public pages and private pages. After logging in successfully, you are ready to build pages in the Palm Tree site for carrying out the following tasks:

- Add or remove or update pages
- Add or remove portlets in newly created pages
- Change layout templates for newly added pages

In general, registered users who have the appropriate permissions will have access to their own public pages and private pages, and then they may have the ability to build pages in the site also.

### Adding pages

Let's add two pages say **Books** and **Departments** in the Palm Tree site. Follow these steps for adding the Books page:

1. Click on the **Add** link (plus icon) on left side of the dock bar panel. In the following screenshot, you can see the **Add** link marked with a red box.
2. Once you click the **Add** link, it will open the **Add** panel on the left-hand side. The **Add** panel allows you to add content, applications, and pages. For adding pages, click on the **Page** link.
3. Simply enter the page name as **Books**, and select the language (the default is US English).

4. Select the page type from the following: **Empty Page, Blog, Content Display Page, Wiki, Panel, Embedded, Link to URL, Link to a page to this Site**, and **Copy of a page to this Site**. The default option is **Empty Page** and the layout is **2 Columns (30/70)**.

5. Finally, click on the **Add Page** button.

The preceding screenshot shows how to add pages in the portal.

Repeat this process to add another page called **Departments**. Of course, you can add as many pages as you want. After adding a set of pages, you can add different portlets.

**Removing pages**

If you decide that you do not need the **Departments** page and want to remove it, we can do this by following these steps:

1. Move the mouse to the page named **Departments**. If the page isn't the current page, then the delete icon will appear.

2. Click on the **Delete** icon next to the page name. A message, **Are you sure you want to delete this page?** with the **OK** and **Cancel** buttons will appear.

3. Click the **OK** button if you want to remove the page.
As you can see, you can remove other pages as well. Removing a page is a simple but dynamic process. You can delete the page by visiting Site Admin | Pages | Site Pages and delete the page.

Note that there is no delete icon for the current page. If you want to delete the current page, then you need to click on another page and make that page a normal page first. Then you can delete it, as previously stated. Furthermore, any instance of portlets on this page would be removed if the page is deleted.

**Adding portlets**

It is now time to add portlets to the newly created pages. Let's say, we need to add the Language portlet to the page Home. Let's do it in the following way:

1. Click on the Home page link in the navigation bar, which you've just created.
2. Click on the link Add link | Applications in the Add panel on the left. This will bring up the add application panel on your screen (follow Figure 2.11).
3. Enter the portlet name Language in the search text box, and locate the Language portlet from the menu. You will find the portlet under the tools category.
4. Click on the Add button to the right of the portlet named Language.
The edit panel interface on the left allows adding a portlet on the page.

You will see that the Language portlet has been added to the top of your page. Now, you are ready to change the portlet placement. Click on the title bar of the portlet, and drag it to wherever you like. You can add many portlets, just as you can add many pages.

**Removing portlets**

If we decide that we no longer need the Language functionality on the Home page, we can remove the portlet by following these steps:

1. Locate the Language portlet.
2. Click on the remove link from the Gear (icon) on the upper-right corner of the portlet.
3. A message, *Are you sure you want to remove this component?* with the OK and Cancel buttons will appear.
4. Click on the OK button.

Of course, you can remove any portlet from any page, but only if you have the proper permissions.

Note that portlet preferences related to the portlet in the page would be removed if the portlet was removed from the page. You cannot recover these after deletion. By the way, if you remove a portlet, such as Web Content Display from a page, it will not remove the portlet content such as the web content itself.

**Changing the layout templates**

You can also change the layout templates for pages. A layout template allows us to arrange the portlets in one, two-two, or one-two-one columns as well as designate the width of the columns. You can add and arrange all the portlets that you would like on the pages, using the layout templates.
Let us follow the steps for changing the layout of the page:

1. First, select the page for which you want to change the layout. You can change the layout for the parent page, which will make changes in all its child pages. In our example, let's select the **Home** page.

2. Click on the **Edit** (icon) | **Edit Page** link. The **Edit Page** section will appear in the panel on the left, as seen in the following screenshot.

3. Now, under the **Layout** page type, you can select any layout such as **Freeform**, **2 columns**, **3 columns**, and so on.

4. Click on the **Save** button.

If you want to have a common layout for all the pages, just you need to select the parent page and change the page layout. In the column on the left, you can see the page hierarchy. It will create a common page layout for all the child pages.

The **Edit Page** feature allows you to edit the page layouts, set a friendly URL, and so on. The preceding screenshot shows the **Edit Page** layout screen.
Note that you can change the layout from Site Admin | Pages | Site pages, under the Palm Tree site administration panel.

Generally speaking, layout templates define the areas where you can place portlets on a page. Normal users or administrators can choose different layout templates for each portal page.

You might need a very specific custom layout as per the business needs. For organizations that develop website games/videos/playlists, each home page will be very different. The portal provides maximum flexibility to deploy extra layout templates.

Setting up portal pages
As an administrator or a website editor, you are required to set up pages of any site. Let's say that you're expected to set up the public pages for the Palm Tree site with the following tasks.

Adding a child page
1. Let us add a child page under the Books page. Select Admin | Site Administration | Pages under the dock bar menu.
2. Click on Add Child Page button; an Add Child Page popup will appear to allow you to fill in the new child page name and page type.
3. Enter the page name as Stories, keep the page type Empty Page. Click on Add page to complete the task.
4. A child page Stories has been created under the Books page, as seen in the following screenshot.
5. Finally, save the child page.

Public pages: These are accessible to anyone, even to users who are not signed-in(guests). Pages can be restricted at any page level for different users through the permission system.
Private pages: These are accessible only to users who are members of the site that owns the pages.
That means that the private pages of an organization's site would be viewable only to members of the organization.
Note that both set of pages, public and private, have different URLs, which will have different themes, layouts, content, and applications.
The whole purpose of private pages and public pages is to allow users to create and maintain their own portal pages for different sites.

For an intranet site, it allows the user to establish an environment that works for them (adding and deleting the portlets that they use). We will see this in more detail in the Exploring Social Networking section of Chapter 6, Blogs, WYSIWYG Editors, and Social Networking.

The Site Pages interface in the site administration panel allows more page configuration options.

### Page type / template

The Liferay 6.2 portal provides different type of page templates like Empty page, Blog, Content display page, Wiki, Panel, Embedded, Link to URL, Link to a page of this Site, and Copy of a page of this site.

Whenever you create a page, it always, by default, selects the page type as Empty page. In some business requirements you might want to use one of the other options.

- **Empty page** will always have the layout defined as two columns (30/70) and it allows you to drag and drop portlets onto the page.

- **Blog** will have three applications related to blogging on the page, which are Blog portlet, Tag Cloud portlet, and Recent Bloggers. This template has two columns with the Blog portlet placed in the main, left column and the Tag Cloud and Recent Bloggers portlets in the right column.
• **Content display page** allows you to have a page that is preconfigured to display content. This page will have three auxiliary applications (*Tags Navigation*, *Categories Navigation*, and *Search*) and an *Asset Publisher*. The Asset Publisher is preconfigured to display any web content associated with this page. You can select this page for a web content article when creating a new web content article or when editing an existing one.

• **The Wiki** page template will have three applications related to a wiki. This too has two columns, the main left column with the *Wiki* portlet and the right column with *Tags* and *Categories* portlets for navigating.

• **Panel** pages can have any number of portlets on them as selected by an administrator, but only one will be displayed at a time. Users select which portlet they want to use from a menu on the left side of the page. The selected portlet is displayed on right-hand side of the page.

![Panel page type](image)

The Panel page type allows end users to navigate and experience different applications on portal.

• **Embedded** page template allows the administrator to set a URL for an external website or application, and it displays content from another website inside your portal page using an Iframe. It’s great for quick integration of external applications. The Iframe helps in automatically resizing the page to avoid unnecessary scrolling.
• **Link to URL** redirects the user to any URL specified by an administrator. The URL can be set to another website such as www.google.com.

• **Link to a page of this site** is used for an immediate redirect to another page within the same site. You can select the page to be link from a dropdown in the page management interface. It can be used as a link to a page to place a deeply nested page in the primary navigation menu of your site.

• **Copy of a page of this site** allows you to copy an existing page of the current site page, including the portlets, to a new page.

### Changing the display order

You can change the display order of the child pages under Admin | Site Administration | Pages within the dock bar menu.

Refer to Figure 2.13. From the page list on the left, select the page for which you want to change the display order with the mouse pointer and drag and drop it at the required position.

### Providing a friendly URL for a page

You can provide a friendly URL for a page as well. For example, you could have the URL for the Books page as http://localhost:8080/web/guest/books.

As many parameters are passed in through the URL, the portal URL is very long and difficult to read. However, you can give your page a friendly URL to make it easier to read and access.

The portal provides a friendly URL for each group (including sites, organization, and user). Therefore, you just type in a friendly URL for a page (this too must start with "/") /books. If there is no duplication, you can now access your page using the following URL pattern:

http://${server-name}/${group-friendly-url}/${page-friendly-url}
Copying pages or portlets

You already have a page named Stories, which is the child page of Books in the Palm Tree site. Now, suppose you would like to copy other page portlets to this Stories page. In such a case, you can use the Copy portlets from page function.

1. Select Admin | Site Administration | Pages under the dock bar menu.
2. Just select the page (like Stories) and click on Copy Applications present right at the top of the site pages. The Copy Applications dialog box popup will appear.
3. Select the page from which you want to copy the portlets to the Stories page. Select the Home page.
4. Save the setting. You can now see the Stories page as an exact copy of the Home page.

Furthermore, you can specify SEO, meta tags, and JavaScript for a given page. For example, if you need to add a function to redirect to an external website on a page, you could directly add JavaScript code in the JavaScript part of that page as shown in the following line:

```
Window.location="http://google.com";
```

Deleting a page

Let's see how we can delete a page. Say that you want to delete the Stories page, which is the child page of the Books page.

1. Select the Stories page and click on the Delete button in the manage page dialog popup.
2. A message, Are you sure you want to delete this page?, with the OK and Cancel buttons will appear.
3. Click on the OK button if you want to delete the page.

Note that deleting a page will delete all child pages related to that page and remove all portlet instances that the page owns.
Multiple languages
The portal is designed to handle as many languages as you want to support. By default, it supports most of the popular languages. When a page is loading, the portal will detect the language it should use, pull up the corresponding language file, and display the text in the correct language.

You can modify the language list by inserting locales.enabled=, followed by your preferred languages in your portal-ext.properties file. For example, locales.enabled=ar_SA,nl_NL,hi_IN offers Arabic (Saudi Arabia), Dutch (Netherlands), and Hindi (India).

For the page Books, the default language is English (United States). If you select a localized language—say, for example, German (Germany)—then you have the capability to enter the Name and HTML Title in German.

Changing the look and feel – themes
You can change the look and feel of the portal or a particular page, that is, your private page. Let's change the look and feel of the Books page.

1. Go to Admin | Site Administration | Pages under the dock bar menu and select the Books page on the left side of the screen.
2. Now to select the look and feel, you will get the option to select the theme on the right side of the screen. Select Define a specific look and feel for this page option.
3. In this dialog box, you will find the details about the current theme with different color schemes and the available new themes. In the following screenshot, we don't have any new themes available.
4. Let's select the color scheme Orange. Save the setting.

There are more features and settings to change the theme for your page.

- You can switch the bullet style between dots and arrows for the portlets
- You can select whether or not to show portlet borders by default
• The CSS section allows you to enter your custom CSS that will be a part of your theme to reflect on the page, overriding the existing ones:

![Figure 2.15: Look and Feel](image)

The Site Pages allows look and feel (theme) settings for each page.

Now the theme is changed to orange color for the **Books** page.

**Managing other settings on a page**

You have more settings for managing page interfaces such as **Custom Fields**, **Advanced**, **Mobile Device Rules**, **Embedded Portlets**, and **Customization Settings**. Let's go through the details:

• **Custom Fields**: In Liferay, you can set the custom field, which are the metadata about the page and can be anything like author name, creation date, and so on. At the page level, you can set the custom field from the Control panel.
• **Advanced**: This is a unique feature for setting up the page with Setting up the query string to provide parameters to the page. This query string helps you with the web content templates. You can set the target for the page so that it either pops up in a particularly named window, or appears in a frameset. Also you can change the page icon, which appears in the navigation bar menu.

• **Mobile Device Rules**: Liferay has mobile support. Mobile Device Rules allow you to apply the rules for pages for different mobile devices. It's basically for rendering of the page in mobile devices.

• **Embedded Portlets**: In Liferay 6.2, a new feature called Embedded Portlets has been implemented. Embedded Portlet allows embedding a portlet into a particular page, using the UI.

• **Customization Settings**: It's one of the best features of Liferay for allowing the users to customize the page according to their requirement.

If you see the top menu, you will see some actions like **Add Child Page, Permissions, Delete**, and **Copy Applications**. Let's click on the permission action to set the permissions on the page.

Liferay gives us the best way to control role-based permission. On clicking on the **Permissions** button, the permission dialog box pops up. Here you can define which specific role should perform a view, update, delete, and so on. A **Guest** user has only **View** permission. The **Owner** has all permissions, whereas a **Site Member** has only **Add Discussion, Customize, and View** permissions:

![Permissions Table](image)

Figure 2.16: The interface for portlet permission setup for setting different permission for users
If you navigate to the parent-page level by clicking on public pages, you will able to see the Export and Import action buttons:

- **Export**: You can export the page content and all the settings to a Liferay Archive (LAR) file. This LAR file can be imported to any page to get the same content and portlet into the page. LARs help you to take backups of your site content.

Note that LAR files depend on the versions, so you have to take care while importing the LARs. You can import the old version of the Liferay LAR file to new version of Liferay.

### Customizing portlets

As a Palm Tree administrator of the enterprise Palm Tree Publications, you may be needed to customize the portlet.

Liferay provides us with a feature to customize the portlet through options/controls like **Look and Feel**, **Configuration**, **Export/Import**, **Maximize**, **Minimize**, and **Remove**.

- **Look and Feel**: This is used to change the portlet display by using the CSS and JavaScript. It even allows enabling and disabling the portlet border among many other settings.

Figure 2.17: The popup interface for portal look and feel (CSS) setting
As you can see in the preceding screenshot, there are many links for settings like Portlet Configuration, Text Styles, Background Styles, Border Styles, Margin and Padding, and Advance Styling:

- **Portlet Configuration**: In this, you can change the portlet title, define a custom title, link portlet URLs to different internal pages, and you can show the border of the portlet
- **Text Styles**: This allows you to change the text style of the portlet
- **Background Styles**: This allows you to change the background style of the portlet
- **Border styles**: This allows you to change the border style of the portlet
- **Margin and Padding**: This allows you to change the margin and padding of the portlet
- **Advanced Styling**: This allows you to configure your own custom CSS styling

- **Configuration**: In some businesses, there might be a requirement for configuring the portlet with the default values. These values will be used in portlet action. In the Sign In portlet configuration, we can see the **Setup**, **Permission**, and the **Sharing** setting.

The portlet administrator and other super users have the right to access the configuration dialog popup. They can change the setting for the portlet.

**Setup** allows setting the default values for the portlet. **Permission** allows setting for the role-based user; the user is able to view and take action on the portlet. **Sharing** allows the setting for sharing the application with external social websites such as Facebook, OpenSocial Gadget, Netvibes, and so on.
In **Sign In - Configuration | Setup | General**, you can set the value for **Authentication Type**. Also, you can change the setting for **Email Notifications**:

![Sign In - Configuration](image)

Figure 2.18: The popup interface for portlet configuration allows setting preference value for portlet

### Navigating the structure of an intranet site

Let's customize the **Home** page by placing the portlets and providing the following functions:

- Show the structured directory of links to all the pages in the portal. You simply add the **Site Map** portlet (portlet ID 85) in a page if the portlet isn't there.
- Display a directory of links by reflecting the page structure, which helps to drill down into the current page. You can add a **Navigation** portlet (portlet ID 71) in a page.
- Display a trail of parent pages for the current page. You just add the **Breadcrumb** portlet (portlet ID 73) in a page.

The **Breadcrumb** portlet displays a trail of parent pages for the current page. It can be placed on public portal pages as a navigational aid for publishing websites. It helps the user visualize the structure of a website and quickly move from a page to a broader grouping of information. Note that the breadcrumb portlet is embedded within the **Classic** theme.
Setting Up a Home Page and Navigation Structure for the Intranet

A **Navigation** portlet provides a directory of links to reflect page structure, with drill down into the current page. Style and appearance are adjustable. The **Navigation** portlet displays links to other pages outside the current page's trail of parent pages. It helps users visualize the structure of a website and provides links to quickly move from one page to another. Moreover, it displays more information about the current page.

The **Site Map** portlet provides us with the ability to display a structured directory of links to all the pages of a website. Furthermore, it can be configured to display the entire site or a sub-section of pages.

![Navigation, Breadcrumb, and Site Map](image)

The preceding screenshot displays **Navigation**, **Breadcrumb**, and **Site Map** portlets.

On the other hand, you can change the **Display Style** of the **Breadcrumb** portlet by clicking on the **Gear** (icon) | **Configuration** | **Setup**. Similarly, you can change **Display Style** and **Bullet Style** for the **Navigation** portlet, which can be changed by clicking on the **Gear** (icon) | **Configuration** | **Setup**. You can also configure **Root Layout**, **Display Depth**, **Include Root in Tree**, **Show Current Page**, **Use HTML Title**, and **Show Hidden Pages** of the portlet **Site Map** by clicking on the **Gear** (icon) | **Configuration** | **Setup**.

**Configuring a portal**

As an administrator at the enterprise Palm Tree Publications, you may need to customize the portal through configuration files in order to satisfy your own requirements.
Let’s see an example for customizing the portal’s configuration. As you can see, the default language is English (United States) and the default time zone is (Coordinated Universal Time (UTC)) when the portal starts. Now, we plan to set the default language as German (Germany) and the default time zone as Central European Time (CET) when the portal starts. We can implement it as follows:

1. Shut the portal down if it is still running, by running $TOMCAT_AS_DIR/bin/shutdown.sh.
2. Clean Tomcat by deleting the files and directories inside temp and work folders.
3. Create the properties file system-ext.properties in $TOMCAT_AS_DIR/webapps/ROOT/WEB-INF/classes and open it.
4. Add the following line to the beginning of the properties file system-ext.properties and save it:
   
   ```
   user.country=DE
   user.language=de
   user.timezone=Europe/Paris
   ```
5. Restart the portal by running $TOMCAT_AS_DIR/bin/startup.sh.

### Configuring portal paths

Before customizing the configuration files at the server level, it is better to review and adjust the values of the following properties in portal.properties, shown with their default values at the time of writing:

- auto.deploy.deploy.dir=${liferay.home}/deploy for auto-deploy
- jdbc.default.url=jdbc:hsqldb:${liferay.home}/data/hsql/ for Hypersonic SQL scripts
- lucene.dir=${liferay.home}/data/lucene for search and indexing
- jcr.jackrabbit.repository.root=${liferay.home}/data/jackrabbit for JCR jackrabbit

What’s the liferay.home variable? What are the /data and /deploy folders used for? By default, the portal has the following settings:

```
liferay.home=${LIFERAY_HOME}
```
For this reason, after installing the portal, you will see following folders under $LIFERAY_HOME:

- **deploy**: This is a folder for hot deploy
  
  Hot deployment allows you to place the war file in the configured directory, and the application server picks up that artifact and deploys it within the application server with any server restart.
  
  Auto deployment works in conjunction with the hot deployment capabilities of your application server. Executing `ant deploy` invokes both deployment and auto deployment tasks, which inject the required JAR files and descriptors into your application archive file.

- **data**: This is a folder for runtime data
- **license**: This is a folder for license information, used only for Community Edition (CE)
- **$APPLICATION_SERVER_DIR**: This is a folder for the application server

As shown in the previous code, you will have the default /deploy and /data folders for the properties such as `auto.deploy.deploy.dir`, `lucene.dir`, and so on. Of course, you can set the `liferay.home` variable to any folder you desire.

### Adding extended properties files

We can override the settings through properties files and determinately configure the portal through the properties files `portal-ext.properties` and `system-ext.properties`. These properties files are stored in the global classpath of application servers, presented as a variable `$PORTAL_EXT_PROPERTIES_HOME`. That is, you can create these properties files and store them at `$PORTAL_EXT_PROPERTIES_HOME`. Moreover, let's introduce another variable `$PORTAL_ROOT_HOME`, presenting the global portal ROOT path. Therefore, you will have the following expression:

```
$PORTAL_EXT_PROPERTIES_HOME=$PORTAL_ROOT_HOME/WEB-INF/classes
```

Obviously, the value of `$PORTAL_ROOT_HOME` is different from the application server as compared to the application server. Moreover, the variable `$AS_WEB_APP_HOME` presents the global web apps folder of the application servers. For example:

- **Tomcat**:
  
  ```
  $AS_WEB_APP_HOME=$TOMCAT_AS_DIR/webapps;
  $PORTAL_ROOT_HOME=$TOMCAT_AS_DIR/webapps/ROOT
  ```
• **JBoss:**

\`
$AS_WEB_APP_HOME=${JBOS_A_RELATIVE}/standalone/deployments; $PORTAL_ROOT_HOME=${JBOS_A_RELATIVE}/standalone/deployments/ROOT.war
\`

• **GlassFish:**

\`
$AS_WEB_APP_HOME=${GLASSFISH_RELATIVE}/domains/domain1/applications;
$PORTAL_ROOT_HOME=${GLASSFISH_RELATIVE}/domains/domain1/applications/liferay-portal
\`

• **Other application servers:** For these, check the documentation provided with them.

As shown in the previous example, \$TOMCAT_A_RELATIVE\ represents the Tomcat folder under \$LIFERAY_HOME\ and \$JBOS_A_RELATIVE\ represents the JBoss folder under \$LIFERAY_HOME. Therefore, we could use \$APPLICATION_SERVER_DIR\ to present the previously mentioned values—\$TOMCAT_A_RELATIVE, \$JBOS_A_RELATIVE, and so on.

## Portal structure

The portal has the following structure or folders under \$PORTAL_ROOT_HOME.\n
• **dtd:** This contains XML document type definitions such as data types, display, hook, layout templates, look and feel, portlet application, service-builder, and ext

• **errors:** This contains an error page 404.jsp

• **html:** This is a main folder for the website

• **layouttpl:** This contains standard or custom layout templates

• **wap:** This is a main folder for the WAP site including common themes, portal layout, themes mobile, and so on

• **WEB-INF:** This contains web specification such as web.xml, including the folders classes, lib, and tld

The html folder has the following subfolders:

• **common:** This contains common themes

• **css:** This contains a set of CSS for the portal

• **icons:** This contains a set of icon images

• **js:** This is a JavaScript for both portal and portlets

• **portal:** This contains portal layout and enterprise edition pages

• **portlet:** This contains default portlet views, including activities, admin, and so on
Setting Up a Home Page and Navigation Structure for the Intranet

- taglib: This contains taglib for portlet, theme, and UI
- themes: This contains default theme folders such as _style, _unstyle, classic, and control_panel
- VAADIN: This contains a set of VAADIN themes and widgetsets

One of the biggest aspects of implementing the portal is, of course, customization of the user experience.

**Portal context**

As you have seen, a browser was automatically launched to a URL http://localhost:8080 when the portal was fully initialized. Why did this happen? How can you customize this? The property `browser.launcher.url` has been set by default in `portal.properties` as follows:

```
browser.launcher.url=http://localhost:8080
```

The previous code specifies a URL to automatically launch a browser to that URL when the portal is fully initialized. You can set this property at the end of the `portal-ext.properties` file as a blank URL if you want to disable this feature.

Besides the URL (that is, http://localhost:8080), it also adds the context path /web/guest. This behavior is related to the property `company.default.home.url`. The property `company.default.home.url` has been set by default in `portal.properties` as:

```
company.default.home.url=/web/guest
```

The previous code sets the default home URL of the portal. Similarly, you can customize this feature in the properties file `portal-ext.properties`.

You may have noticed that the portal remembered your last visited path upon a successful login. How does it work? The property `auth.forward.by.last.path` has been set by default in `portal.properties` as follows:

```
auth.forward.by.last.path=true
```

The previous code shows that users are forwarded to the last visited path upon successful login. If you set it to false in the properties file `portal-ext.properties`, then users will be forwarded to their default layout page.
Terms of use page settings

The portal provides the ability to force all users to accept some terms of use text before using the portal for the first time. For example, before using the portal for the first time, the portal forces the user admin@bookpub.com/admin to accept the terms of use. The reason is that the terms.of.use.required property has been set by default in portal.properties as follows:

```
terms.of.use.required=true
```

The previous code shows that all users are required to agree to the Terms of Use before using the portal for the first time. If you set the property false in the properties file portal-ext.properties, then every user is not required to accept some terms of use text before using the portal for the first time.

Default text is included within the portal. However, in most of the installations where this feature is used, this text will need to be customized. Fortunately, you can use a Web Content article to change the text of Terms of Use with the following settings in the properties file portal-ext.properties:

```
terms.of.use.journal.article.group.id=$ARTICLE_GROUP_ID
terms.of.use.journal.article.id=$ARTICLE_ID
```

The previous code shows the group ID ($ARTICLE_GROUP_ID) and the article ID ($ARTICLE_ID) of the Journal (Web Content) article that will be displayed as the Terms of Use. The default text will be used if no Journal article is specified. Therefore, all administrators can manage the terms of use instead of the developers.

Session settings

As you can see, the default browser was automatically launched to the URL http://localhost:8080, when the portal was fully initialized. More interestingly, the session ID value will be different from time to time. The property session.enable.url.with.session.id has been set to false by default in the portal.properties file as follows:

```
session.enable.url.with.session.id=false
```
Setting Up a Home Page and Navigation Structure for the Intranet

The previous code sets the `session.enable.url.with.session.id` property to `false` in order to disable sessions. To enable it, you can set the `session.enable.url.with.session.id` property to `true` in the `portal-ext.properties` properties file.

![Palm Tree](image)

Figure 2.20: Session time-out

For security purpose, session time-out is essential for any portal.

Of course, you can configure session-related features as well. For instance, you may override the following properties in the properties file `portal-ext.properties`:

```properties
session.timeout=30
session.timeout.warning=1
session.timeout.auto.extend=false
session.timeout.redirect.on.expire=false
session.enable.persistent.cookies=true
```

As shown in the previous code, the property `session.timeout` specifies the number of minutes before a session expires. This value is always overridden by the value set in `web.xml` under the folder `$PORTAL_WEB_INF_HOME`. The `session.timeout.warning` property specifies the number of minutes before a warning is sent to the user, informing the user of the session expiration. You can specify 0 to disable any warning.

For the property `session.timeout.auto.extend`, you can set auto-extend mode to true in order to avoid having to ask the user whether to extend the session or not. Instead, the session will be extended automatically. The purpose of this mode is to keep the session open as long as the user's browser is open, with a portal page loaded. It is recommended to use this setting along with a smaller `session.timeout`, such as 5 minutes, for better performance.

You can set the property `session.timeout.redirect.on.expire` to true if the user is redirected to the default page when the session expires. By default, the user isn't redirected to the default page. Furthermore, you may set the property `session.enable.persistent.cookies` to `false` to disable all persistent cookies, so that features like automatic login don't work.
Default admin

As you have seen, the default admin account is test@liferay.com/test. The screen name of the default account is test, its default first name is Test, and its default last name is Test as well. This default account has been specified in portal.properties as follows:

```properties
default.admin.password=test
default.admin.screen.name=test
default.admin.email.address.prefix=test
default.admin.first.name=Test
default.admin.middle.name=
default.admin.last.name=Test
```

The previous code sets the default admin account password, screen name prefix, e-mail address prefix, first name, middle name, and the last name. Of course, you can override these properties in the properties file portal-ext.properties.

Guest layouts

The Guest group must have at least one public page. The settings for the initial public page are specified in following properties:

```properties
default.guest.public.layout.name=Welcome
default.guest.public.layout.template.id=2_columns_ii
default.guest.public.layout.column-1=58
default.guest.public.layout.column-2=47
default.guest.public.layout.column-3=
default.guest.public.layout.column-4=
default.guest.public.layout.friendly.url=/home
```

The previous code sets the name of the public layout, the default layout template ID, the portlet IDs for the columns specified in the layout template, and the friendly URL of the public layout. This is the reason that the default public page of Guest has the name Welcome, layout template ID 2_columns_ii, portlet IDs 58 (Sign In portlet) and 47 (Hello World portlet), and the friendly URL /home.
Setting Up a Home Page and Navigation Structure for the Intranet

Friendly URLs
As you can see, private pages (My Dashboard) for the user admin@liferay.com/admin have friendly URLs such as /user/admin/home, and public pages (My Profile) for the user admin@liferay.com/admin have friendly URLs such as /web/admin/home. The public pages of Guest have friendly URLs such as /web/guest and the private pages of Guest have friendly URLs such as /web/guest/welcome. Why is this so? This is because the following properties are set in portal.properties.

```properties
layout.friendly.url.private.group.servlet.mapping=/group
layout.friendly.url.private.user.servlet.mapping=/user
layout.friendly.url.public.servlet.mapping=/web
```

The previous code shows that the friendly URLs for users and groups can be set at runtime. When typing keywords for a friendly URL, you should not use reserved keywords. The property `layout.friendly.url.keywords` specifies a set of reserved keywords in the properties file `portal.properties`.

```properties
layout.friendly.url.keywords=\c,\group,\web,\image,\page,\public,\private,\rest,\tunnel-web
```

The preceding code sets reserved keywords that cannot be used in friendly URLs. You can reset the value of the `layout.friendly.url.keywords` property in the properties file `portal-ext.properties`.

Mail configuration
In general, there are three parts involved in configuring a mail system integrated with the portal:

1. Installing the mail systems.
2. Configuring the portal to read and to send e-mails.
3. Integrating the portal and the mail system for the creation of new accounts.

Usually, installing mail systems involves installing an SMTP server and an IMAP server. This is not related to the portal, so for that, you should check the documentation provided with the mail server software.

The portlet Mail allows us to visualize all our e-mails from several e-mail accounts. It can be used to integrate the portal and the mail system for the creation of new accounts.

This section will introduce you to the way to configure the portal in order to read and send e-mails. Normally, there are two options: by JNDI name mail/MailSession and by Java mail.
Mail session

Liferay 6.1 looks for the default configuration for the mail server and tries to communicate with the server and send mail to the user. It always looks for it in the same install system where Liferay is installed. Now let’s change the setting for the mail session in Liferay, and set the JNDI name to look up the Java mail session. In order to enable the JNDI name, you need to add the following line at the end of portal-ext.properties first:

```
mail.session.jndi.name=mail/MailSession
```

If no name is set, then the portal will attempt to create the Java Mail session based on the properties prefixed with mail.session.

Then you need to set the Global JNDI Lookup. This process differs from one application server to another. For Tomcat, add the following lines after the line `<Context path="" crossContext="true"> in $TOMCAT_AS_DIR/conf/Catalina/localhost/ROOT.xml (or domain.xml for GlassFish):

```
<Resource name="mail/MailSession"
  auth="Container"
  type="javax.mail.Session"
  mail.imap.host="imap.gmail.com"
  mail.imap.port="993"
  mail.pop.host="pop.gmail.com"
  mail.store.protocol="imap"
  mail.transport.protocol="smtp"
  mail.smtp.host="smtp.gmail.com"
  mail.smtp.port="465"
  mail.smtp.auth="true"
  mail.smtp.starttls.enable="true"
  mail.smtp.user="${username}"
  password="${password}"
  mail.smtp.socketFactory.class="javax.net.ssl.SSLSocketFactory"/>
```

Note that the preceding code is a sample code that uses Gmail as an example. You need to replace the mail servers (IMAP, SMTP, and POP), domain names, port numbers, and user accounts.
Java-mail

The portal has unified the configuration of Java-mail in a properties file so that it's the same for all application servers, that is, Geronimo, JOnAS, Resin, Jetty, GlassFish, JBoss, Tomcat, and so on. Add the following lines at the end of `portal-ext.properties`:

```properties
mail.session.mail.pop3.host=pop.gmail.com
mail.session.mail.pop3.password=
mail.session.mail.pop3.port=110
mail.session.mail.pop3.user=
mail.session.mail.imap.host=imap.gmail.com
mail.session.mail.imap.port=993
mail.session.mail.store.protocol=imap
mail.session.mail.transport.protocol=smtp
mail.session.mail.smtp.host=smtp.gmail.com
mail.session.mail.smtp.password=${password}
mail.session.mail.smtp.user=${username}
mail.session.mail.smtp.port=465
mail.session.mail.smtp.auth=true
mail.session.mail.smtp.starttls.enable=true
smtp.socketFactory.class=javax.net.ssl.SSLSocketFactory
```

The previous code sets the properties used to create the Java mail session. The property prefix `mail.session.` will be removed before it is used to create the session object. These properties will only be read if the `mail.session.jndi.name` property isn't set.

By default, the portal has Java Mail specified in `portal.properties` in this way:

```properties
mail.session.mail.pop3.host=localhost
mail.session.mail.pop3.password=
mail.session.mail.pop3.port=110
mail.session.mail.pop3.user=
mail.session.mail.smtp.auth=false
mail.session.mail.smtp.host=localhost
mail.session.mail.smtp.port=25
mail.session.mail.smtp.user=
mail.session.mail.store.protocol=pop3
mail.session.mail.transport.protocol=smtp
```

According to the properties in the previous code, the same features are provided in the Web UI of the Control Panel.
You could use the Web UI by going to Control Panel | Configuration | Server Administration | Mail, and also by configuring the mail server settings such as POP and SMTP. Fortunately, the Web UI provides us with the ability to set up Advanced Properties, where you would be able to manually specify additional Java-mail properties to override the preceding configuration. Therefore, you could configure the same main configuration through the Web UI, in a way similar to the mail configuration that you performed earlier in portal-ext.properties.

**Mail hook**

Besides the previously discussed settings, you could override the following properties in portal-ext.properties:

```
mail.mx.update=true
mail.audit.trail=
    mail.hook.impl=com.liferay.mail.util.DummyHook
```

The preceding code sets the mail.mx.update to true property.

You could set it to false if the administrator is not allowed to change the mail domain via Server | Server Administration | Mail or via Portal | Settings | General in the Control Panel. Through the property mail.audit.trail, you could enter a list of comma-delimited e-mail addresses that will receive a BCC of every e-mail sent through the mail server.

Moreover, using this property, you could set the name of a class that implements com.liferay.mail.util.Hook such as CyrusHook, DummyHook, FuseMailHook, GoogleHook, SendmailHook, and ShellHook.

By using a hook, you can change the existing code for the service layer or change the portlet properties and even change the look and feel of some existing application. It is something like hooking the code with your changes.

Note that the mail server will use this class to ensure that the mail and portal servers are synchronized with user information. The portal will know how to add, update, or delete users from the mail server only through this hook.

Additionally, you would be able to configure the following properties in portal-ext.properties:

```
google.apps.username=
google.apps.password=
```
As shown in the preceding code, you will be able to set the default username and password for Google Apps integration. The domain used by Google Apps is retrieved from the portal's mail domain. Note that Google Apps integration isn't used unless the property `mail.hook.impl` is set with the value `com.liferay.mail.util.GoogleHook`.

**Bringing pages together in action**

Let's place some portlets on the page and perform some action on each.

**Adding comments on a page**

The Page Comments portlet (portlet ID 107) allows users to easily add comments to a page. By using this portlet, you can easily add, edit, or delete comments. Let's do it as follows:

1. Add the Page Comments portlet to the Home page of the Palm Tree site where you want to add comments, if the portlet isn't there.
2. Click on the Add Comment link if you want to add comments.
3. Input your comments—click on the Reply button to save the comments or the Cancel button to cancel them.
4. You can edit comments by clicking on the Edit button first. Then update the comments. Click on the Update button to save the changes, or Cancel button to cancel the changes, as shown in the next screenshot.
5. You can delete page comments by clicking on the Delete button. A screen will appear asking you if you want to delete this. Click on the OK button to confirm deletion, or the Cancel button to cancel deletion.
6. Or you can go to the top of the Page Comments portlet by clicking on the Top button, if there are a lot of page comments and you are not at the top of the list.
7. The **Page Comments** portlet is scoped into the current page of that particular site. As the **Page Comments** portlet isn't *instanceable*, one page can have only one **Page Comments** portlet.

![Page Comments](image)

Figure 2.21: Page Comments

This screenshot shows the **Page Comments** portlet.

---

How do you add a UI tag to incorporate comments to a portlet? You can simply use a `<liferay-ui:discussion>` taglib, which allows users to discuss any type of content or pages in any portlet.

---

**Rating a page**

The Page Ratings portlet (portlet ID `108`) allows users to rate a page with 1 to 5 stars. You can add the Page Ratings portlet to a page to receive page ratings.

The Page Ratings portlet can be placed in any portal page to allow users to rate the contents available on that page as a whole. It can be used in a user profile page too, as a way to allow the end users to rate the user. As shown in the following screenshot, the Page Ratings portlet uses Ajax-based ratings that avoid a full-page reload—the rating belongs to an authenticated user and it doesn't allow the same user to rate a page more than once. However, the rating can be changed at any time, and it has a nice appearance based on graphical stars.

![Page Ratings](image)

Figure 2.22: Page Rating
The preceding screenshot shows the Page Rating portlet.

Similar to the Page Comments portlet, the Page Ratings portlet is scoped into the current page. The Page Ratings portlet isn't instanceable; one page can have only one Page Ratings portlet.

How can I add a UI tag to incorporate ratings into a portlet? You can simply use a `<liferay-ui: ratings>` UI taglib that allows users to rate any type of content or pages in any portlet.

Flagging content on a page

The Page Flags portlet (portlet ID 142) can be placed in any portal page to allow the users to flag content in the current page as inappropriate. It will enable a user to flag some content as inappropriate for a reason and warn the administrator about it. As shown in the next screenshot, the flags are Ajax-based that avoid a full-page reloading; it will send an e-mail to the administrators so that they can take appropriate action.

The portlet Page Flags normally appears as a small icon of a red flag close to the content (for example, blogs and message boards), which will enable users to flag some content as inappropriate.

There are several properties in portal.properties that can be overridden in portal-ext.properties:

```
flags.reasons=sexual-content,violent-or-repulsive-content,hateful-or-abusive-content,harmful-dangerous-acts,spam,infringes-my-rights
flags.email.from.name=Joe Bloggs
flags.email.from.address=test@liferay.com
flags.guest.users.enabled=false
```
As shown in the previous code, you can enter a list of questions used for flag reasons, override e-mail notification settings, and set `flags.guest.users.enabled` to `true` in order to enable guest users to flag content.

![Page Flag](image)

**Figure 2.23: Page Flag**

The preceding screenshot shows the **Page Flag** portlet.

Programmatically, you can use a `<liferay-ui:flags>` UI taglib that allows you to flag any type of content or page in any portlet. How does it work? You can refer to the `$PORTAL_ROOT_HOME/html/portlet/flags/edit_entry.jsp` JSP file.

---

### Sharing portlets within a portal page

Within the portal, especially the Sharing portlet with the portlet ID 133, you can share as many portlets as you want. All portlets will have the **Sharing** tab at **Gear (icon) | Configuration**. You can share any portlet (for example, **Sign In**) with any website such as **Facebook**, **Google Gadget**, **Netvibes**, and **Friends**.

It's possible to use any portlet in any website, including these built-in scripts with static HTML pages. For example, to share the **Site Map** with any website, just copy the following code, paste it into your web page and this application will show up:

```html
<script type="text/javascript">
    Liferay.Widget({
        url: http://www.bookpub.com:8080/widget/web/palm-tree/home/-/85_INSTANCE_K76kRysf5LoG'});
</script>
```
Setting Up a Home Page and Navigation Structure for the Intranet

Downloading the example code
You can download the example code files for all Packt books you have purchased from your account at http://www.packtpub.com. If you purchased this book elsewhere, you can visit http://www.packtpub.com/support and register to have the files e-mailed directly to you.

The preceding code uses a Widget to display the Site Map portlet of the Home page.

By the way, if you select the checkbox Allow users to add Site Map to any website, you will see an icon plus a link Add to any Website under Configuration.

It's also possible to use any portlet as a Facebook application. The Facebook integration is implemented through an IFrame (It is also possible to use FBML.). Each portlet in the portal is automatically exposable to Facebook. Simply go to Gear (icon) | Configuration | Sharing | Facebook, first set your Facebook API key (for example, 136be69d497ed2688f8c853a651c81f17) and Canvas Page URL (for example, test). Then copy the following callback URL and specify it in Facebook. This application will be exposed to Facebook via an IFrame:

http://www.bookpub.com:8080/widget/web/guest/home/-/85

Similarly, you can use the following Google Gadget URL to create a Google Gadget:

http://www.bookpub.com:8080/google_gadget/web/guest/home/-/85

Note that the preceding URLs are generated automatically in the portal. You have to use the real URLs of servers in order to make them work properly. In case the URL http://www.bookpub.com:8080 does not work, try out with http://localhost:8080.

How does it work? You can refer to the JavaScript details in $PORTAL_ROOT_HOME/html/js/liferay/portlet_sharing.js.

Configuring Control Panel
As mentioned earlier, we have managed a logged-in user's private pages (My Dashboard) and public pages (My Profile) through Admin | Site Administration | Page. Now, let's go further and see how to manage a logged-in user's public pages.

Generally speaking, the Control Panel is a feature of the portal that allows us to modify portal settings and controls. As shown in the next screenshot, Control Panel provides a centralized administration for all content, users, organizations, site, roles, server resources, and more.
Liferay 6.2 control panel has been divided into four main sections Users, Sites, Apps, and Configuration.

**Liferay 6.2 Control Panel**

The **Control Panel** is a unified way to access all portal administration tools within the portal. It provides access to four categories: Users, Sites, Apps, and Configuration, as shown in the next screenshot.

- **Users**: The portal administrator can administrate all portlets related to users, organizations, roles, users groups as well as password policies.
- **Sites**: The portal administrator has access to manage sites as well as the tools to build the sites (site templates and page templates). Admin can manage any site (as long as the user has the permission access) simply by clicking on the site name. Through the Control panel, managing a site becomes very user friendly.
- **Apps**: Apps is one place for all types of plugin. New trends gave Liferay a term Apps, which will have all sorts of extensions to a product. In Liferay 6.1 Marketplace was being used. The admin could install the app from the Marketplace. Here, a store link provides the same feature.
- **Configuration**: The portal administrator can handle the entire portal level configuration. All kinds of configuration at server level such as handling memory uses, cache, log levels, plugins, and so on are also done here.

Once inside the **Control Panel**, the logged-in user will only be able to see the control section at the top of the page, for which he/she has permissions. A regular user with no administration permissions will not be able to see the control panel link in the dock bar.

![Liferay 6.2 Control Panel](image)

Figure 2.24: Liferay 6.2 Control Panel has different categories for different purposes
We will take a more detailed look at working with different controls and applications inside the control panel in the upcoming chapters.

Liferay 6.1 came with a new concept of "Marketplace". Marketplace is a small hub of collected applications which the user can install anytime.

Marketplace leverages the entire Liferay ecosystem to release and share apps with the users, through a user-friendly environment and a one-stop site. We will discuss this in detail in Chapter 10, *Marketplace, Social Office, and Audience Targeting*.

**My Account**

Finally, the user section in the dock bar shows the user's name and provides links to the user's My Profile (user's publicly-accessible pages), My Dashboard (user's private pages), My Account settings, and a Sign out link.

As an administrator, you are now running the portal and you see a set of portlets in the default page. It is ready for you to update your profile anytime, to update the screen name, e-mail address, first name, last name, icon, language, display settings, and so on. A user can click on My Account right under the user name in the dock bar. The My Account popup has links to Account Settings, My Pages, My Workflow Tasks, and My Submissions. We will look at each of them in detail in later chapters.

In short, the My Account link is useful for a logged-in user in the enterprise Palm Tree Publications to update their profile.

In Liferay 6.2, the My Account link has moved from the Control Panel to the dock bar.
Now, in Liferay 6.2, **My Account** provides an easy way to handle a user's information and the related/associated workflow at one place.

![My Account](image)

Figure 2.25: A user's My Account popup with many new configuration settings

[75]
My Profile

My Profile is especially a public page, which can be viewed by different users in the portal. Here, the logged-in users have the ability to update their public pages by placing the portlets. The users can also change the look and feel of the page by clicking on My Account | My Pages.

![Figure 2.26: A user’s public page as My Page](image)

My Dashboard

My Dashboard is essentially the private page of the logged-in user, which can be viewed only by the users logged into the portal. Here, the logged-in users have the ability to update their dashboard pages by placing the portlets. The users can also change the look and feel of the page by clicking on My Account | My Pages and then selecting the My Dashboard tab.
Configuration and settings

The **Control Panel** settings and configuration can be changed through the portal-ext.properties file. Generally, the layout name that is named.

The properties `control.panel.layout.name` and `control.panel.layout.friendly.url` are specified by default in portal.properties as follows:

```
control.panel.layout.name=Control Panel
control.panel.layout.friendly.url=/manage
```

The preceding code sets the name of the layout as **Control Panel** and it sets the friendly URL of the layout as `/manage`. Of course, you can override these properties in portal-ext.properties.

The **Control Panel** comes with a default theme, `controlpanel`, as shown in portal.properties.

```
control.panel.layout.regular.theme.id=controlpanel
```

The preceding code sets the theme of the layout to **Control Panel**. It's possible to configure it to use any custom theme. To that end, the property `control.panel.layout.regular.theme.id` can be overridden in portal-ext.properties.
Summary
This chapter discussed how to implement a portal page with portlets. It also showed how to customize the look and feel of pages and portlets through themes and the look and feel preferences. It helped us to understand the portal, portlet container, and portlets according to the JSR-286 specification—how to set up the portal, including installation options and deployment matrix, how to configure the home page and all the other pages of the intranet website. Then it introduced us to building basic pages, as well as setting up the portal pages. It also discussed how to navigate the structure of the intranet via portlets, for example, Site Map, Breadcrumb, and Navigation. It also showed us how to configure the portal. Finally, it provided guidance for bringing the pages together in action, sharing any portlet within a portal page, and for customizing the Control Panel.

In the next chapter, we’re going to bring in users, user groups, organizations, roles, and permissions.
In the previous chapter, we discussed in detail the pages of the Portal-Group-Page-Content pattern. In this chapter, we’re going to open the book group and take a deeper look into it. The portal provides a powerful yet highly configurable, full-security model to control resources, permissions, roles, users, organizations, locations, sites, and user groups. This full security model incorporates fine-grained permissions and role-based access control to give administrators full control over access and privileges to portlets, layouts, groups, and content within the portal. With role-based access control, users can assign permissions to other users, sites, organizations, and user groups via roles. Moreover, users can control permissions scoped up to the portal or down to the page or the content.

This chapter begins with enterprises, departments, and locations, the hierarchy, and the role-based access control model. Then, it proceeds to how to bring in users, organizations, locations, user groups, and roles together. Furthermore, it will discuss all the ways to assign users to organizations, sites, user groups, and roles. In addition, it introduces authentications related to managed accounts, Lightweight Directory Access Protocol (LDAP), Single Sign-on (SSO), Central Authentication Service (CAS), OpenID, OpenSSO, and SiteMinder. Finally, it gives details about how to manage permissions, use permission algorithms, and assign permissions to different resources via roles.

In this chapter, you will learn the following things:

- Building a hierarchy of enterprises, departments, and locations
- Setting up organizations and locations
- Building user groups
- Bringing in users
- Establishing authentication
- Managing roles
- Assembling authorization
Enterprise, departments, and locations

The enterprise Palm Tree Publications has its global headquarters in the U.S. with several departments (such as editorial, engineering, marketing, website, and so on). Each department has staff in the United States, Germany, and India. As shown in following figure, the enterprise, departments, and locations form a hierarchy. In this chapter, we will build this hierarchy with a model called role-based access control (RBAC).

Before starting, let's assume that we have a set of users in the enterprise Palm Tree Publications. We will plan to bring the following users into the portal; briefly, a user is an individual who performs tasks using the portal:

<table>
<thead>
<tr>
<th>Full name</th>
<th>Screen name</th>
<th>E-mail</th>
<th>Organization</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palm Trees</td>
<td>bookpubadmin</td>
<td><a href="mailto:admin@bookpub.com">admin@bookpub.com</a></td>
<td>Enterprise</td>
<td>US</td>
</tr>
<tr>
<td>David Berger</td>
<td>david</td>
<td><a href="mailto:david@bookpub.com">david@bookpub.com</a></td>
<td>Editorial</td>
<td>US</td>
</tr>
<tr>
<td>Lotti Stein</td>
<td>lotti</td>
<td><a href="mailto:lotti@bookpub.com">lotti@bookpub.com</a></td>
<td>Editorial</td>
<td>US</td>
</tr>
<tr>
<td>Rolf Hess</td>
<td>rolf</td>
<td><a href="mailto:rolf@bookpub.com">rolf@bookpub.com</a></td>
<td>Editorial</td>
<td></td>
</tr>
<tr>
<td>Julia Maurer</td>
<td>julia</td>
<td><a href="mailto:julia@bookpub.com">julia@bookpub.com</a></td>
<td>Editorial</td>
<td>Germany</td>
</tr>
<tr>
<td>Sachin Agarwal</td>
<td>sachin</td>
<td><a href="mailto:sachin@bookpub.com">sachin@bookpub.com</a></td>
<td>Editorial</td>
<td>India</td>
</tr>
<tr>
<td>James Masse</td>
<td>james</td>
<td><a href="mailto:james@bookpub.com">james@bookpub.com</a></td>
<td>Website</td>
<td>US</td>
</tr>
<tr>
<td>John Stucki</td>
<td>john</td>
<td><a href="mailto:john@bookboop.com">john@bookboop.com</a></td>
<td>Website</td>
<td>Germany</td>
</tr>
<tr>
<td>Sunil Goyal</td>
<td>sunil</td>
<td><a href="mailto:sunil@bookpub.com">sunil@bookpub.com</a></td>
<td>Website</td>
<td>India</td>
</tr>
<tr>
<td>Martin Gall</td>
<td>martin</td>
<td><a href="mailto:martin@bookpub.com">martin@bookpub.com</a></td>
<td>Editorial</td>
<td>Germany</td>
</tr>
</tbody>
</table>

Figure 3.1: The Palm Tree enterprise structure
Let's suppose that as an administrator of the enterprise Palm Tree Publications, you are planning to create a set of users, as listed in the preceding table, and a set of organizations and locations to represent the preceding hierarchy. Moreover, you are planning to set up authentication and authorization, and you are also planning to do more with user administration and organization administration as well.

**Role-based access control**

Traditional membership security models address two basic criteria: *authentication* (who has access) and *authorization* (what they can do):

- **Authentication** is a process of determining whether someone or something is, in fact, who or what it is declared to be
- **Authorization** is a process of finding out whether the person, once identified, is permitted to have access to a resource

The portal extends the preceding security model using terminologies: resources, users, organizations, locations, user groups, sites, roles, permissions, and so on. The portal provides a role-based, fine-grained permission security model—a full access control security model. At the same time, it also provides a set of administrative tools (which we will discuss later), which can be used to configure and control membership.

The remainder of this section will explore these concepts and relationships among these terminologies, as shown in the following figure. Without a doubt, it will be useful to provide the big picture on how to bring in users. For example, as a user in the engineering department, you may plan to develop a number of portlets to satisfy the enterprise's, Palm Tree Publications, current requirements or even plan for future requirements. The following figure gives a view of the big picture of the security model.
This diagram illustrates the relationship mapping between **Organization**, **Site**, **Users**, and **Role** in Liferay:

![Diagram showing the relationship between Organization, Site, Users, Role, and Permission](image)

**Figure 3.2: The Liferay organization structure with User, Sites, Role, and Permission**

**Role and permission**

As shown in the preceding figure, **Resource** is a base object. It can be a portlet (for example, Message Boards, Calendar, Document Library, and so on), an entity (for example, Message Board Topics, Calendar Event, the Documents and Media library folder, and so on), or a file (for example, documents, images, applications, and so on). Resources are scoped into portals, groups, pages, and content—model resources and application (or portlet) types.

A **permission** is an action on a resource. Portal-level permissions can be assigned to the portal (for example, users, user groups, organizations, and sites) through roles. Organization-level permissions can be assigned to organizations. Site-level permissions can be assigned to sites. Page-level permissions can be assigned to page layouts. Model permissions can be assigned to model resources (for example, blogs entries, web content, and so on). Portlet permission can be assigned to portlets (for example, view, configuration, and so on).

A **role** is a collection of permissions. Roles can be assigned to users, sites, organizations or organizations based on location. If a role is assigned to a site, organization, or location, all users who are members of that entity receive permissions of the role.
User
A user is an individual who performs tasks using the portal. Depending on the permissions that have been assigned via roles, the user either has the permission or doesn't have the permission to perform certain tasks.

Additionally, each user can have public pages and private pages. More interestingly, a user's private pages and public pages do have the ability to use page templates that can be used to customize a set of pages. All the Liferay Portal pages belong to group called "site".

Organization and location
An organization represents the enterprise-department-location hierarchical structure, such as those of organizations, schools, universities, nonprofit organizations, and government organizations. Organizations can contain other organizations as suborganizations in a hierarchy to unlimited levels. In detail, a suborganization acting as a child organization of a top-level organization can also represent departments of a parent corporation/organization. Moreover, users can be assigned to one or many organizations. Organizations and suborganizations can all reside in a single hierarchy or cut across different hierarchies. For example, a bank organization wants to have an employee portal with respect to different branches, where each branch represents a suborganization.

A location is a special organization, with one and only one parent organization associated and with no child organization associated. In simple words, a location organization is based on the location, for example, India, Germany, and so on. Organizations can have any number of locations and suborganizations. Both roles and users can be assigned to organizations (locations or suborganizations).

Note that the organization administrator's rights apply to both their organization and the suborganization.

By default, a member of a suborganization is a member of the parent organizations. We can customize this setting in the portal-ext.properties configuration file.

By default, locations and suborganizations inherit permissions from their parent organization via roles.
User groups and sites

Site is a special group with a flat structure. It can hold a number of users who share common interests. Thus, we can say that a site is a collection of users who have a common interest. Both roles and users can be assigned to a site.

Actually, sites are special groups that have a set of users or a set of user groups. Thus, a site can have a set of users associated. Normally, a site is used to represent a set of users who share common interests. An organization can be associated and unassociated to an existing site whenever required for business needs.

All users of the organization will become members of the site automatically. This means that they will have access to the private pages of the site and will be able to do any action that has been configured to be doable only by members.

How is a site different from an organization?

There is very thin line between both. Sites are mainly about pages and organizations are about user management. Sites can have members and can be hierarchical too. Sites can be open, restricted, or private based on the privacy needs of the site, whereas organizations don't have such features. They are always considered to be centrally maintained. Most importantly, both organizations and sites will have their own private pages and public pages. They also have the ability to apply site templates to easily customize websites.

Last but not least, user group is a special group with no context, which may hold a number of users. In other words, users can be gathered into user groups. Users can be assigned to user groups.

In addition, each user group can have public pages and private pages. Thus users in a user group can share private pages and public pages. More interestingly, a user group's private pages and public pages do have the ability to apply page templates in order to quickly customize a set of pages. All the Liferay Portal pages belong to group called "site".

Organizations

As mentioned earlier, we can use organizations to represent the enterprise Palm Tree Publications and its department's hierarchy. In the preceding chapter, we created the organization Palm Tree under the topic "Building the Palm Tree Publications site", which we will be treating as the top-level organization. Palm Tree will represent the whole company and will have different departments under it as a set of suborganizations. Now we can create an organization hierarchy under "Palm Tree".
Therefore, the enterprise can be represented as a regular organization of the type **Regular Organization**.

On the right-hand side, you can see the **Organization Site** link, where you can select the checkbox to create the site for the organization. The name and description of the site will be automatically synced with those of the organization (to save the administrator time).

As you can see, there is a toolbar used for top-level navigation. This toolbar is located at the top of the New Organizations title, providing quick access to the most used functions when working with organizations:

- **Add**: This has a dropdown with **User**, **Regular Organization**, and **Location**.
- **Export Users**: By this action, you can export all the users in the **CVS format**. And it will download to your local system.

So, after you save the organization successfully, the **Organization Details** page opens, with many more configurations. Settings are of the type **Organization Information**, **Identification**, and **Miscellaneous**.

The Palm Tree organization settings details provide different headings for settings.

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Figure 3.3: Palm Tree organization details
Let's see in brief details of the right-hand side controls with different headings:

- **Organization Information**: This tells us about the details of the organization, such as name, type, site IS, parent organization (if it exists), organization site, and finally categorization
- **Identification**: This helps administrators to save all the details related to the organization, such as organization addresses, phone numbers, additional email addresses, websites, and services
- **Miscellaneous**: This contains comments for the organization, reminder queries, and custom fields

We will discuss this in detail in the *Editing an organization* section.

So, you have created a top-level organization. Now, we need to create organizations for the main departments in the enterprise.

**Managing organizations**

Organizations can contain other organizations as suborganizations. This is useful in large companies, where each department might almost be a separate company, with little interaction among them.

**Adding child organizations**

Let's create two departments within the "Palm Tree" Enterprise, **Editorial**, and **Marketing** departments by following these steps:

1. Click on *Users and Organizations* under the Users category.
2. Click on *Add button* and select the *Regular Organizations* link in the same way you did for *Adding a top-level Organization*.
3. Enter *Editorial Department* in the *Name* field.
4. Select a value for type—use the *Regular Organization* default value:
   1. Click on the select button under *Parent Organization*.
   2. A pop-up dialog box will appear; select the parent organization, say *Palm Tree*.
5. Click on the *Save* button.
Adding a child organization in Liferay is as simple as this:

![Figure 3.4: Adding a child organization](image)

You can add as many child organizations under a parent organization as you want. Optionally, you can add the child organization **Marketing Department** from the parent organization **Palm Tree** by following these steps:

1. Click on **Users and Organizations** under the **Users** category of **Control Panel**.
2. Locate the desired parent organization from the top level organization list, for example, **Palm Tree**.
3. Click on the **Add Regular Organization** icon from **Actions** to the right-hand side of the organization.
4. Enter the enterprise information in the **Name** input field, say **Marketing Department**.
5. Leave **Regular Organization** as the default value of **Type**.
6. Leave **Palm Tree** as the default value of **Parent Organization**.
7. Click on the **Save** button to save the inputs, or click on the **Cancel** button to discard the inputs.

Of course, you can create other departments in most organizations similarly. After adding child organizations, for example, **Engineering Department** and **Website Department**, you can view organizations.
Creating a site with private and public pages

In Liferay, you can create a site while creating Organization. Let's create a site for Palm Tree that will have public pages (as a community site) and private pages (as an intranet site):

1. Upon clicking on the Organization Site link, a checkbox with Create Site will appear.
2. Check in to the Create Site checkbox.
3. It will ask you for the public and private pages for the sites, which will have Site Templates for selection, that is, Community site and Intranet site.
4. Now you can select the site template with the community site and intranet site for public pages and private pages respectively.
5. Save the changes.

It will create Site with the same name as that of an organization. The name and description of the Site will be automatically synced with those of the organization (to save the administrator time). You can manage the site pages by clicking on Manage Site in Action on the right-hand side of the organization. All the Liferay Portal pages belong to this group called "site".

The following screenshot shows how to create an organization's public and private pages:

![Figure 3.5: Organization Site creation](image)

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[88]
Viewing organizations

As compared to adding child organizations, viewing organizations is much simpler. This is explained as follows:

1. Click on Users and Organizations under the Users category of Control Panel. It displays sets of top-level organizations and users without an organization. Now, in the top level organization, you will be able to see the parent organization with the field's name and type of organization.

2. Locate an organization, for example, Palm Tree, which you want to view first, and then click on the organization from the link, for example, Palm Tree.

3. You will be redirected to the organization details page, where you can see the set of child organizations.

Searching organizations

You can find organizations using either a basic search or an advanced search. To search for organizations, click on Users and Organizations, and then input search criteria for a basic search.

For an advanced search, you need to click on the All Organizations tab, and beside the search text button, you will find the gear icon for advanced search. Now, click on the icon, input the organization's information in the input fields (for example, name, street, city, zip, country, and region), select the Type value Regular Organization for advanced search, and click on the Search button. A list of organizations matching the search criteria appears at the bottom of the organization screen.

A basic search will search both organizations and locations. Using the advanced search, you can search organizations with the Type value Regular Organization, and locations with the Type value Location, or both with the Type value any.

Similarly, you can do an advanced search for users by clicking on the All Users tab and filling the required fields for the search criteria, that is, First name, Middle Name, Last name, Screen name, Email, and Status. Using advanced search will help to find the actual users from all of the organization throughout the portal.
Editing an organization

After adding organizations, you are ready to manage them. For example, you want to update the organization’s Website department information (for example, changing name, parent organization, and logo). Let's do it by following these steps:

1. Click on Users and Organizations and then locate the organization (for example, the Website department with the Type value Regular Organization, which you want to edit).
2. Click on the Edit icon from Actions to the right-hand side of the organization or click on any links of the organization, for example, the Website department.
3. Type the changes in the Name input field.
4. Remove the current parent organization through the Remove link, or select an organization as the parent organization through the Select link.
5. Click on the Change link and upload an image, for example, Organization-logo.png.
6. Click on the Save button to save the changes.

Note that one organization can have one and only one parent organization. When you select an organization as the parent organization of an organization that already has a parent, the current parent organization will get overridden by the selected one. Of course, an organization should not select itself as its parent organization.

As you can see, the portal provides a menu on the right-hand side of the screen, which shows all sections of forms, thereby allowing faster navigation through them in a way that doesn't require a page reload. Forms for adding and editing organizations are different, which allows a fast and easy way to create organizations and a deeper personalization afterwards. Items in the menu are grouped into three sections: Organization Information, Identification, and Miscellaneous. By default, when creating an organization, only the organization's details are visible. When editing an organization, you would be able to see the rest of the enabled sections by following these steps:

- **Organization Information:**
  - **Organization Site:** You can create a site associated with your organization. Once you select the Organization Site link and select the Create Site checkbox, it will ask you the public and private pages for the sites, and it will create the Site with the same name as that of the organization. The name and description of Site will be automatically synced with those of the organization.
**Categorization:** You can categorize your organization by adding tags. Each organization can have multiple tags.

- **Identification:**
  - **Address:** This holds the mail address information; each organization can have multiple addresses.
  - **Phone number:** This manages phone numbers; each organization can have multiple phone numbers.
  - **Additional Email Address:** This manages e-mail addresses; each organization can have multiple e-mail addresses.
  - **Organization websites:** This manages websites; each organization can have multiple websites, either intranets or public.
  - **Services:** This manages services; each organization can have multiple services.

- **Miscellaneous:**
  - **Comments:** This manages comments; each organization can have one comment box.
  - **Reminder Queries:** This manages reminder queries in different languages. An administrator can set a predefined reminder question for specific organizations for the users to retrieve their forgotten password.
  - **Custom Fields:** This manages values of custom attributes if custom attributes have been added to the current organization. The administrator can add additional fields to existed models/entries. Say, for example, **Palm Tree** needs additional entries for different suborganizations. Using custom fields, you can achieve it very easily.

> Note that no changes are applied until the **Save** button is clicked.

### Deleting an organization

For some reason, a department (for example, Website Department) does not exist anymore. You need to delete this organization in the portal. We will do it by following these steps:

1. Click on **Users and Organizations**.
2. Locate the organization that you want to delete (for example, **Website Department**).
Bringing in Users

3. Click on the **Delete** icon from **Actions** on the right-hand side of the organization, or select the checkbox on the left-hand side of the organization and press the **Delete** button.

4. A screen will appear asking whether you want to delete the selected organizations. Click on the **OK** button to confirm, or click on the **Cancel** button to cancel.

Note that you can't *delete an organization* that has *child organizations, locations, or users* associated with it. In order to delete this organization, you need to remove child organizations, locations, or users from this organization first, and only then will you be able to delete it.

### Assigning users to an organization

Users can be assigned to an organization by following these steps:

1. Click on **Users and Organizations**.
2. Locate an organization (for example, **Editorial Department**).
3. Then, click on the **Assign Users** icon from **Actions** on the right-hand side of the organization.
4. Click on the **Available** tab to display a list of all available users in the portal. Search for the desired users using the search form (by either a basic search or an advanced search). Tick the checkboxes on the left-hand side of the desired users. If you would like to select all of the users on the current page, then check the checkbox next to the name column.
5. Click on the **Update Associations** button to assign users to an organization. Optionally, to confirm that desired users were successfully associated with the organization, click on the current tab.

Additionally, you can view users by clicking on the **View Users** icon from Actions on the right-hand side of the organization. Moreover, each organization that has the **Site** associated with it has its own public pages and private pages. You can manage these pages by clicking on the **Manage Site** icon from Actions on the right-hand side of the organization. Otherwise, you can assign user roles by clicking on the **Assign User Roles** icon from Actions on the right-hand side of the location.
Using organizations in an effective way
Organizations represent the enterprise and department hierarchy. Each organization has a set of basic properties, such as name, parent organization (not for top-level organizations), status, country, and so on. It can also have a set of optional properties, such as, e-mail addresses, mail addresses, websites, phone numbers, services, comments, custom fields, and so on.

An organization can represent a parent corporation. An example would be the enterprise Palm Tree Publications.

An organization that acts as a child organization of a top-level organization can also represent departments of a parent corporation. Examples would be Editorial Department, Marketing Department, and so on.

Logically, users can be members of more than one organization. For best practice, it is better to make a user belong to only one organization. So, make sure your organizations don't overlap. For example, if you have a department called Marketing Department and another department called Engineering Department, then the marketing manager can be in one department or the other, but not in both.

This might seem limiting, but there is an answer—Sites with user groups. A user can be a member of any number of user groups, and "managers" is a common user group. Now we can associate a user group with Sites. We'll see how to work with them later.

Location-based organizations
A company can have several locations, just as it has many departments. Palm Tree Publications has one location in California, United States, one in Berlin, Germany, and one in Mumbai, India. Let's go ahead and create them.

Adding a location for the enterprise
First of all, we need to add a location for the enterprise Palm Tree Publications, that is, the organization Palm Tree US. Let's do that now:

1. Click on Users and Organizations.
2. Then, click on the Add button and select the Location link.
3. Enter the enterprise information in the Name input field (for example, Palm Tree US), Select Type with the Location value, select a country from the Country menu (for example, United States), and a region from the Region menu (for example, California).
4. Click on the Select button to select **Parent Organization**. In the organization selection page, choose **Palm Tree Enterprise**.

5. Click on the Save button to save the inputs.

So we've added a location for a top-level organization. Now, we need to create locations for Editorial Department.

Let's create a location-based organization in Liferay for the parent organization Palm Tree. The following screenshot shows the addition of locations to organizations:

![Control Panel with Add Location option](image)

*Figure 3.6: Adding Location organization*

Generally speaking, a location is a special organization, which associates with a parent organization. Most importantly, locations can't have any child organizations associated with them. Locations can usually be distinguished by their geographic position. An organization can have any number of suborganizations and locations. Obviously, locations are the leaves of organizations.
Adding locations for suborganizations

Let's create a location called Editorial US for the "Editorial" department by following these steps:

1. Click on Users and Organizations. Then, click on the Add button and select the Location link.
2. Enter the enterprise information in the Name input field (for example, Editorial US, select Type with the value Location, select a country from the Country menu, for example, United States and a region from the Region menu, for example, California.
3. Click on the Select button to select a value for Parent Organization. In the organization selection page, choose the Editorial Department.
4. Click on the Save button to save the inputs.

Similarly, we can add another location called Editorial Germany for the Editorial Department or we can add it directly as follows:

1. Click on Users and Organizations and locate a parent organization.
2. Click on the Add Location icon from Actions on the right-hand side of the organization.
3. Enter enterprise information in the Name input field (Editorial Germany), Select Type with the value Location, select a country from the Country menu (Germany) and a region from the Region menu (Berlin).
4. Keep the default value of Parent Organization.
5. Click on the Save button to save the inputs.

You can create other locations for most organizations in the same way, after which, you can view them.

Creating a site with private and public pages

Just as with the Palm Tree organization, we will create a site for the Palm Tree US location organization, which will have public pages (as a community site) and private pages (as an intranet site):

1. Click on the Organization Site link; you will able to see a checkbox with create site. Enable the checkbox for Create Site.
2. It will ask you for the public pages and private pages for the sites, which will have Site Templates for selection, that is, the Community site and the Intranet site.
3. Now, you can select the site template with **Community site** and **Intranet site** for public pages and private pages, respectively.
4. Save the changes.

It will create the site with the same name as that of an organization. The name and description of the Site will be automatically synced with those of the organization (to save the administrator time). You can manage the site pages by clicking on **Manage Site in Action** on the right-hand side of the organization. All the Liferay Portal pages belong to the group called "site".

Note: **Site Templates** can be created and managed by the site administrator.

**Viewing locations**

Compared to adding locations, viewing them is much simpler. It is done by following these steps:

1. Click on **Users and Organizations** under the **Users** category of **Control Panel**. You will be able to see a list of top-level organizations and the list of Users.

2. Locate an organization in the top-level organization list, and select the organization you want to view first. See the following screenshot.

3. Now, if you want to view the specific organization, let's say Editorial department. You just need to select the organization link, that is, the organization name.

4. Then, you will be able to view all the suborganization of that particular organization.

5. In the following screenshot, you will see the location-based organization 'Palm Tree US'.
A list of suborganizations, users under the Palm Tree organization, and location-based organizations is given here too.

![Figure 3.7: Viewing location-based organizations](image)

**Searching locations**

Locations are searchable either by **advanced search** or by **basic search**. To search for locations, simply click on **Users and Organizations** under the **Users** category of **Control Panel** first, then input the organization information in the search input fields, and then click on the **Search** button. You will get the particular searched organization as a list below the search button.
Now for the advanced search, click on the All Organizations link. Once you click on this, you will get all the parent organizations, suborganizations, and organizations by location as a list. Now you can see the gear icon beside the Search button. Click on the gear icon and advance search criteria (see the following screenshot), select the Type value as Location, and click on the Search button. It will provide the searched list with organization type value as Location.

Here's an advanced search for a location-based organization list:

![Advanced search criteria](image)

**Editing a location**

After adding locations, we are ready to manage them. Consider that we want to update the location information of Website US (for example, changing parent organizations and adding e-mail addresses and comments). We can do this by following these steps:

1. Click on Users and Organizations under the Users category of Control Panel.
2. Find the location (for example, Website US) with the Type value as Location that you want to edit.
3. Click on the Edit icon from Actions on the right-hand side of the location, or click on links of the location (for example, the name Website US).

4. Then, in the editing page, type the changes in the Name input field and select values from the Country and Region menus to make changes. Otherwise, click on links on the right-hand side, such as Email Addresses, Addresses, Websites, Phone Numbers, Services, Comments, Custom Fields, and so on.

5. Click on the Save button to save the changes.

Deleting a location
For some reason, a location, say Website US, doesn't exist anymore. Therefore, we need to delete this location in the portal. We can do it by following these steps:

1. Click on Users and Organizations under the Users category of Control Panel.
2. Locate the location you want to delete, for example, Website US.
3. Click on the Delete icon from Actions on the right-hand side of the location, or select the checkbox on the left-hand side of the location and press the Delete button.
4. A screen will appear that asks whether you want to delete the selected locations. Click on the OK button to confirm.

Note that you can't delete a location that has users associated with it. In order to delete this location, you need to remove all users from it first.

Assigning users to a location
Users can be assigned to a location as follows:

1. Click on Users and Organizations under the Users category of Control Panel.
2. Locate a particular location (for example, Editorial US).
3. Then, click on the Assign Users icon from Actions on the right-hand side of the location.
4. Click on the Available tab to display a list of all available users in the portal.
5. Select users by checking in the checkbox, click on the Update Associations button to assign users to the current location. Optionally, to confirm that the desired users were successfully associated with the current location, click on the Current tab.
Bringing in Users

In addition, you can view a location's users by clicking on the Location link (Editorial US), which will provide you with the suborganization and user list associated with that organization. Now, each organization that is Location-based can have its own Site, which will again have private pages and public pages. Fortunately, you can manage these private and public pages by clicking on the Manage Site icon from Actions on the right-hand side of the location.

Using locations in an effective way

Locations are special organizations associated with a parent organization and have no child organizations. A location can be used to represent a child corporation of an organization and is usually distinguished by its geographic location. An organization can have any number of sub organizations and locations, while a location must belong to one and only one organization. Some examples would be Editorial US, Editorial Germany, and Editorial India.

Each location has a set of basic properties (for example, name, parent organization, country, and so on). As a special organization, each location can also have a set of optional properties as well as the properties of a regular organization, for example, e-mail addresses, addresses, websites, phone numbers, services, comments, custom fields, and so on.

Organization settings

As you have seen, there are two ways of adding and editing organizations: regular organization and location. When adding an organization, the default value of type would be Regular Organization, whereas when adding a location for a regular organization, the default value of type would be Location.

When you choose the type Regular Organization, the drop-down menus Country and Region are invisible. However, when you choose the type Location, the drop-down menus Country and Region are visible again. How does it work?

As you can see, there is a difference between the forms to add or edit organizations. When adding a regular or a location organization, you will see only one section—Organization Information with Details. When editing an organization or location, you will be able to see the rest of the enabled sections, such as Identification, Miscellaneous, and the Organization Information section. Under the Organization Information section, Details and Organization Site are visible. Under the Identification section, you would see Addresses, Phone Numbers, Additional Email Addresses, Websites, and Services. Under the Miscellaneous section, you will have Comments, Reminder Queries, and Custom Fields. How can we customize it?
The portal provides the organization administration tool with the following design patterns to achieve better usability and more flexibility. You can customize the preceding features using the overriding properties.

**Organization types**

Organization types are configurable. By default, the following properties are set in portal.properties:

```
organizations.types=regular-organization,location
organizations.rootable[regular-organization]=true
organizations.children.types[regular-organization]=regular-organization,location
organizations.country.enabled[regular-organization]=false
organizations.country.required[regular-organization]=false
organizations.rootable[location]=false
organizations.country.enabled[location]=true
organizations.country.required[location]=true
```

The preceding code shows the configuration of organization types. The organizations.types property specifies two organization types: regular-organization and location. This configuration mandates that a regular-organization can be a root at the top level with no parents, and it can have a regular-organization and a location as children, whereas a location must always have a regular-organization as a parent and it can't have any children.

The country is disabled for the regular-organization as it isn't required for the regular-organization. However, it is enabled and required for the location. This is the reason that when you choose the Regular Organization type, the drop-down menus Country and Region are invisible. When you choose the type Location, the drop-down menus Country and Region are visible.

You can override these properties in portal-ext.properties.

**Organization forms**

The kinds of organization forms are add form and update form. The following properties have been set for the add form by default in portal.properties:

```
organizations.form.add.main=details,organization-site
organizations.form.add.identification=
organizations.form.add.miscellaneous=
```

As shown in the preceding code, you can input a list of sections that will be included as part of the organization form when you add an organization. For the add form, only the main section has two items, details and organization site. Thus, when adding an organization or location, you will see only one section, Organization Information.

The following properties have been set for the update form, by default, in portal.properties:

- `organizations.form.update.main=details,organization-site,categorization`
- `organizations.form.update.identification=addresses,phone-numbers,additional-email-addresses,websites,services`
- `organizations.form.update.miscellaneous=comments,reminder-queries,custom-fields`

As shown in the preceding code, you can input a list of sections that will be included as part of the organization form when updating an organization. For the update form, three sections (Organization Information, Identification, and Miscellaneous) are available. Therefore, when editing an organization or location, you will be able to see all sections, including Identification, Miscellaneous, and Organization Information (that is, main).

These properties can be overridden in portal-ext.properties. For example, you can hide some items in any sections or add new items to a given section.

**Overriding assignment and membership**

In addition, you can override properties related to assignment and membership. By default, the following properties have been set in portal.properties:

- `organizations.assignment.strict=true`
- `organizations.membership.strict=false`

As shown in the preceding code, you can set the `organizations.assignment.strict` property to false if you want any administrator of an organization to be able to assign any user to that organization. By default, the administrator will only be able to assign the users of organizations and suborganizations that they can manage.

In the same way, you can set the `organizations.membership.strict` property to true if you want users to only be members of the organizations to which they are assigned explicitly. By default, they will also become implicit members of the ancestors of those organizations. For example, if a user belongs to Editorial US, then they will implicitly be a member of the ancestors Editorial Department and Palm Tree Enterprise, and they will be able to access their private pages. These properties can be overridden in portal-ext.properties instead.
Hierarchy tree and Shared Global

As mentioned earlier, organizations and locations are the mechanisms to organize users and websites just as a portal following a hierarchical structure. Each attached website can have a team and a dedicated workflow. That is the only way to have a hierarchical structure of websites. An organization represents the logical structure of the company or institution where the portal is going to be used. It has a hierarchical structure with as many levels as required. A location represents a physical location where the company or the institution users can work. Each location belongs to an organization.

The organization hierarchy

A regular organization can be a root, with no parent organization. A regular organization can even have a parent organization and many child organizations or locations. A location must have a regular organization as a parent and have no child organizations. Therefore, organizations and locations form a hierarchical structure: regular organizations form the root and trunk, while locations form leaves.

How can you benefit from the organization hierarchy? The first benefit you can get is inherited permissions. Each user can be assigned to at the most one organization inheriting the permissions and associations of that organization. The user will also inherit all permissions and associations of parent organizations of that organization that have been marked as inherited. Each user can be assigned to at the most one location. That location must belong to an organization that the user is assigned or to one of the inherited parent organizations of that organization.

The second benefit you can get is content sharing in the organization hierarchy. As mentioned in the previous chapter, content could be scoped into pages. Organizations and locations have their own content. Through a hierarchical structure, the content in parent organizations can be shared in child organizations. For example, the content in Palm Tree enterprise would be accessible in "Editorial Department". Furthermore, content in both Palm Tree enterprise and Editorial Department would be accessible in the location "Editorial US".

Shared Global

The portal provides a global space called Shared Global that only the administrator can manage. Any content in the global space will be publishable in any organization or site pages. In addition, web content structures and templates will be reusable all across the portal. It's very useful to share a Dictionary (categories/tags) as well. Vocabularies are often shared between organizations for normalization purposes.
Note that Shared Global is not portal-wide. It is limited to the portal instance in which it resides, that is, Shared Global is associated with a portal instance. You would have one unique shared global scope for each portal instance.

User groups
Like many departments, a company might have several user groups. Palm Tree Publications has Julia Maurer, an Editorial manager in the Germany office and John Stucki, a website manager also in the Germany office. Both are managers but belong to different departments, thanks to the user group called Managers that contains a number of users belonging to different departments. Let's go ahead and create them.

User groups provide a way to group users independently of the organizations to which they belong. Administrators can define a user group and assign the user group as a member of a site to make all of its users members automatically.

User groups give some of the best solutions. They help to simplify the mapping of several roles to a group of users. They helps us to simplify membership to one or more sites by specifying a group of users. And they help us to provide predefined public or private pages to the users who belong to the user group.

Adding a user group
First of all, we will create a user group "Managers", which contains users Julia Maurer and John Stucki, by following these steps:

1. Click on User Groups under the Users category of Control Panel.
2. Then click on the Add button.
3. Enter a name for the user group in the Name input field (for example, Managers).
4. Enter the description of the user group. Leave the default User Group Site.
5. Click on the Save button to save the inputs.
6. Then, click on the Assign Members icon from Actions on the right-hand side of the user group Managers.
7. Click on the Available tab to display a list of all the available users in the portal. Check the checkboxes on the left-hand side of the desired users. Note that these users don't exist at the moment. We'll learn about adding users in the next section.
8. Click on the **Update Associations** button to assign users to a user group. Optionally, to confirm that the desired users were successfully associated with the user group, click on the **Current** tab.

Other user groups can be created in a similar fashion. After adding one more user group, **Developers**, we can view user groups, as shown in following screenshot:

![Figure: 3.9: A list of the current user groups](image)

As you can see, there is a toolbar for top-level navigation. The toolbar is located at the top of the user groups section just below the **User Groups** title.

Note: If the users with the permission are able to see the action in the toolbar, the **Add** button allows them to add user groups.

## Creating User Group Site with public pages and private pages

In Liferay, **Site** is one of the cool features. Whenever we need public pages and private pages, there will be sites for each of them. Now, you can create a site for **User Group**, with respect to public pages (as a **Community site**) and private pages (as an **Intranet site**).

Let’s edit **Managers Group** and create the site with public and private pages:

1. Click on the **Action** button on the right-hand side and click on **Edit**.
2. Now, select the public pages as **Community site** and private pages as **Intranet site** under the heading **User Group Site**.
3. Save the changes by clicking on the **Save** button.

Now, you have successfully created the site for the respective user group. You can manage the site pages by clicking on **Action** and selecting **Manage site pages**.
The name and description of Site will be automatically synced with those of the User Group (to save the administrator time).

The site of a user group cannot be accessed directly by end users. The pages of a user group will be shown automatically as part of the public or private pages of the personal site of each user who belongs to the user group. To allow users to make changes, enable the customization options of each page.

Managing user groups
As mentioned earlier, a user group can hold any number of users. In fact, a user group is also a special group that may have a set of users and permissions by virtue of the roles they are associated with. User groups are different than both organizations and sites because they have no context associated with them.

Viewing user groups
To view user groups, click on User Groups under the Users category of Control Panel. A list of user groups appears at the bottom of the screen. Click on the user group that you want to view (for example, Managers). The portal will display Name and Description of that user group.

Searching user groups
User groups are searchable. To search user groups, click on User Groups under the Users category of Control Panel. Then, type a user group name as search keywords, and click on the Search button. For an advanced search, click on the gear icon beside the search button. A drop-down search form will appear, where you can search by Name and Description of the group.

Editing a user group
You might need to edit a user group. Click on User Groups under the Users category of Control Panel, and then locate the user group that you want to edit. Click on the Edit icon from the Actions button on the right-hand side of the user group, or click on any links of the user group. In the Edit page, type the changes in the New Name input field and the Description input field. Then, click on the Save button to save the changes.
Deleting user groups

For some reason, the Developers user group does not exist anymore. We need to delete this user group in the portal. We will delete the Developers user group as follows:

1. Click on User Groups under the Users category of Control Panel.
2. Locate the user group that you want to delete (that is, Developers).
3. Then, click on the Delete icon from the Actions button on the right-hand side of the user group, or check the box on the left-hand side of the user group and click on the Delete button.
4. A screen will appear asking you if you want to permanently delete the selected user groups.
5. Click on the OK button to delete the selected user group.

Similarly, you can delete multiple user groups by checking the checkboxes located on the left-hand side of the user groups that you want to delete first and then click on the Delete button. All user groups can be deleted at one go by checking the checkbox located next to the Name column and then clicking on the Delete button. A screen will appear asking whether you want to permanently delete the selected user groups. Click on the OK button to delete or the Cancel button if you do not want to delete the selected user groups.

Assigning users to a user group

Users can be assigned to a user group by following these steps:

1. Click on User Groups under the Users category of Control Panel.
2. Locate the user group to which you want to assign members and click on the Assign Members icon from the Actions button on the right-hand side of the user group.
3. Click on the Available tab to display a list of all available users in the portal. To assign users to the current user group, select the users and click on the Update Associations button. Optionally, to confirm that the desired users were successfully associated with the current user group, click on the Current tab.
Bringing in Users

As you can see, each user group has its own public pages and private pages. Of course, you can manage these pages by clicking on the Manage Site Pages icon from the Actions button on the right-hand side of the user group. Note that users who belong to the current user group will have these pages copied to their user pages when the user is first associated with the current user group. User groups can cross organizational boundaries and can be used to assign all members to other collections, such as sites or roles. User groups may also be used to customize personal site templates for members.

Users

Users are individuals who perform tasks using the portal. Administrators can create new users or deactivate existing users. Users can join sites, be placed into organization hierarchies, be delegated permissions in roles, or be collected into user groups.

As stated earlier, a user is an individual who performs tasks using the portal. Users can belong to a regular organization, special organization, location, or user group. Before adding new users, let's suppose we log in with the admin account Palm Tree to add new users in the portal.

Adding users

Let's add Martin Gall, who works in the editorial department in the Germany office.

1. Click on Users and Organizations under the Users category of Control Panel.
2. Then click on the Add button. Select User from the drop-down menu.
3. Enter the user's information in the input field. Most importantly, Screen Name, (for example, Martin) and Email Address, (for example, martin@bookpub.com) are required, along with the First Name and the Last Name, since both act as unique identifiers for this user. When this user logs in, the Screen Name, Email Address, or User Id will be used as the login ID.
4. A location can be selected by clicking on Organizations in the menu on the right-hand side (such as Editorial Germany, to which the new user belongs).
5. Click on the Save button to save the inputs; after you save the inputs, you will see the message, Your request completed successfully.
Adding users in Liferay Portal with all the details, such as organization, sites, user group, private and public pages, and so on. The following screenshot shows the users setting page:

![Control Panel](image)

Figure 3.10: Adding a user

As shown in the previous screenshot, there is a toolbar used for top-level navigation. This toolbar is located at the top of the Users section and below the Users title, which provides quick access to the most used functions when working with users:

1. **Add** shows a drop-down menu with three options: User, Regular Organization, and Location. Once you click on User, the adding user form will appear; only users with proper permissions will be able to see this in the toolbar.

2. **Export** is a very simple export functionality to download a CSV file that contains User ID and Email Address of all the users. It is available only to users with the Administrator role.
Bringing in Users

What's happening?
You added the first user to the portal. When we create the new account, the portal will send an e-mail to the specified e-mail address that notifies the user that they can log in and start using the portal.

Note that the e-mail will only be sent successfully if you have specified an SMTP server in the mail portlet for the portal to use.

Here's an example of the e-mail that Martin will receive:

Dear Martin,
Welcome! You recently created an account at http://bookpub.com/. Your password is *********. Enjoy!
Sincerely,
Palm Tree
admin@bookpub.com
http://bookpub.com

Figure 3.11: E-mail notification settings

When the user clicks on the link, he will be taken to a page that displays signing in as a regular account. After inputting his e-mail address and password and clicking on the Sign in button, they will be taken to a page that displays terms and conditions, including the terms of use.

Note that you would be able to change the e-mail notification (for example, the "account created" notification and "password changed" notification). This will be discussed in detail in a later chapter.

Adding more users
We will add a few more users, David Berger and Lotti Stein, in the way we just mentioned. Both belong to the editorial department in the US offices.

Fortunately, there are two more options to add users—to add a user for a given organization and to add a user from scratch, as mentioned in the following paragraph:

You can add David Berger from scratch by following these steps:

1. Click on Users and Organizations under the User category of Control Panel.
2. Then click on the Add button. And select User from the drop-down menu.
3. Enter the user's information in the input fields, select the organization link from the right-hand side menu, and select the organization location (Editorial US).

4. Click on the Save button to save the inputs.

Let's add Lotti Stein through a given organization by following these steps:

1. Click on Users and Organizations. Select a location (Editorial US) to which you want to add a new user.

2. Click on the Add User icon from the Actions located on the right-hand side of the organization to which you want to add a user. You will see that the selected organization has been selected by default.

3. Enter the user information in the input fields.

4. Click on the Save button to save the inputs.

Creating a personal site with public and private pages

Users can have a personal site with the help of public pages and private pages. While creating users, we can assign Personal sites for the user.

Let's create a personal site for David Berger with Public pages and Private pages:

1. Select the user (David Berger), click on Action on the right-hand side, and select Edit action.

2. Click the personal site link on the right-hand side panel. You will be able to see the Personal site's heading with the public pages options: Default, Community site, and Intranet site, and the same is true for private page too.

3. Select one option for each public page (Community site) and private page (Intranet site).

4. Save the changes by clicking the Save button.

Now, the personal site for David Berger has been created successfully. The name and description of the Site will be automatically synced with those of the User's (to save the administrator time).
Adding users in bulk

It won't be long before you're bored of manually adding users. Fortunately, you don't need to type them all in one at a time. There are several options to add users in bulk:


- **Single Sign-On (SSO)**: This is a method of access control that enables a user to authenticate once and gain access to the resources of multiple software systems. For example, CAS, NTLM, OpenSSO, SiteMinder, SAML and so on.

- **OpenID**: This is a decentralized single sign-on system.

Creating an account on the fly

As an administrator at Palm Tree Publications, you can set up the portal allowing users to create an account on the fly. For example, Rolf Hess accesses the portal's login page and clicks on the Create Account tab. He inputs the user information and text verification and then clicks on the Save button. How do you do this?

Go to **Control Panel** | **Configuration** | **Portal Settings** (under the Configuration category) | **Authentication** link on right-hand side, and now, under the **General** tab, check the **Allow strangers to create accounts?** box.

The portal will create an account for the user Rolf Hess and send an e-mail to him with a new password.

Note that there is no organization or location selected for the new account created on the fly. In order to set the proper organization and location to the new account, administrators have to update this account on the portal.

Fortunately, as an administrator, you can set up **Default User Associations** on Sites, Roles, and User Groups. You can find this feature at **Control Panel** | **Configuration** | **Portal Settings** | Users | Default User Associations.
The portal's default users association helps to directly associate the users with the respective sites, organization sites, roles, and user groups.

![Portal settings for default user associations](Image)

Figure 3.12: Portal settings for default user associations

**What to do when a user forgets the password?**

If a user forgets their password, they can access the portal's login page and can click on the **Forgot Password** tab. They need to input their e-mail address and text verification and then press the **Send New Password** button. The portal will create a new password for the user and mail it to them. As mentioned in the previous chapter, you can configure this feature.

**Managing users**

You can add users of others departments in most organizations in a similar fashion. After adding more users, we can view the users.
Viewing users

Users could either be Active or Inactive on the portal. It is simple to view active users. Click on Users and Organizations under the category User of Control Panel. You will be able to see the top-level organization list and the Users list, which are not associated with any organization. To view all the active users on the portal, click on All users. A list of users appears on the other page. Locate the user that you want to view first, and click on the user’s name (for example, David).

The following screenshot display the list of users on the portal, which are associated with a different organization:

![Figure 3.13: View all users](image)

Optionally, we can view users for a specific organization or location. To view users that belong to a specific organization, simply click on the Organizations section. You will be able to see the Suborganization list and the Users list belong to the same Organization. Now, you want to view Users, Suborganization and Location Organization. Then, drill down to Suborganization. Refer to Figure 3.7.
Similarly, you can view users that belong to a specific user group by clicking on the User Groups section and then clicking on Assign Members icon from the Actions button on the right-hand side of a user group. Under the current tab, you will be able to see the list of users associated with that particular group. Most interestingly, you can view users associated with a specific role by clicking on the Roles tab in the Users category and then clicking on the View Users icon from the Actions button on the right-hand side of the role.

To view deactivated users, select Inactive from the show selection box. Otherwise, click on the gear icon beside the search box for an advanced search and select the Inactive status. Click on the Search button to display a list of deactivated users.

### Searching for users

Users are searchable. First, you can search users by clicking on Users and Organization under the Users category of Control Panel. Click on the gear icon beside the search box for an advanced search. Input the user's information in the input fields and select a value of the status (Any Status, Active, and Inactive) for an advanced search. Finally, click on the Search button. A list of users matching the search criteria appears at the bottom of the user's screen.

Note that the basic search is only useful for active users. To find inactive users, just select the show selection box value as Inactive. Otherwise, you can use the advanced search option and select Inactive from the Status options.

### Editing a user profile

After adding users, we are ready to manage them. For example, we want to update the profile of Lotti Stein (such as changing the name, parent organizations, and adding e-mail addresses and comments). Let's do it by following these steps:

1. Click on Users and Organizations under the User category of Control Panel.
2. Search the user whose record you want to update, and click on the user (in our case Lotti Stein).
3. Click on the Edit icon from the Actions button on the right-hand side of the user and click on any links of the user.
4. A screen will appear that displays the user's information. Type the changes in the First Name, Middle Name, Last Name, Email Address, Screen Name, and Job Title input fields, and select from the Title, Suffix, Birthday, and Gender menus to make the changes.
5. Optionally, you can change the icon, Display Settings (including Display Language, Time Zone, and Greeting), Password, Role, Organization, Additional Emails Addresses, Addresses, Comments, Custom Attributes, and so on.

6. Click on the Save button to save the changes.

Note that the functions to edit a user are the same as that of updating the profile in My Account. In My Account, you can only update your own information (as a logged-in user).

As can be seen, the portal provides a right-hand side menu for users, showing sections of forms that allow navigating through them in a fast way that doesn't require page reload. Forms to add and edit users are different, allowing an easy and fast way to create users and a deeper personalization afterwards. Similar to other forms of organizations, items in the right-hand side menu are grouped into three sections: User Information, Identification, and Miscellaneous. By default, when creating a user, only Details, Organizations, and Sites are visible. Refer to the right-hand side menu in Figure 3.11. The following are the items in the right-hand side menu:

- **Password**: This changes the user's password.
- **Organizations**: This changes the membership in organization (or locations) associations. Each user can be a member of multiple organizations (or locations).
- **Sites**: This changes membership in sites. Each user can be a member of multiple Sites.
- **User Groups**: This changes the membership in user groups. Each user can be a member of multiple user groups.
- **Roles**: This changes associations of roles. Each user can be associated with multiple roles, such as regular roles, inherited roles, organization roles, and site roles.
- **Personal Site**: This manages a user's private pages and public pages. If site templates are available, then you would be able to apply existing site templates on both private pages and public pages.
- **Categorization**: This adds tags. Each user can have multiple tags.
- **Addresses**: This holds mail address information. Each user can have multiple addresses.
- **Phone Numbers**: This manages phone numbers. Each user can have multiple phone numbers.
• **Additional Email addresses**: This manages e-mail addresses. Each user can have multiple e-mail addresses.

• **Websites**: This manages personal websites. Each user can have multiple websites—either intranets or public ones.

• **Instant Messenger**: This manages instant messengers, such as YIM, Skype, and Windows Live Messenger.

• **Social Network**: This manages Social Networks, such as Facebook, Myspace, and Twitter.

• **SMS**: This manages SMS.

• **OpenID**: This manages OpenID.

• **Announcement**: This manages announcements by Email and SMS notification.

• **Display Settings**: This manages display settings using language setting, time zone, and greetings.

• **Comments**: This manages comments.

• **Custom Fields**: This manages values of custom attributes if custom attributes have been added to the current user.

Note that no changes are applied until the **Save** button is clicked. Obviously, the right-hand side menu shows at all times which sections have been modified and whether a save is pending. It allows us to make changes to different sections and to save everything at once. Therefore, clicking on the **Save** button will save all the changes at any point in time.

### Deactivating a user

Imagine that "Lotti Stein" has become inactive, and we need to deactivate their user account. To deactivate a user, just follow these steps:

1. Click on **Users and Organizations** under the **Users** category of **Control Panel**.
2. Search for the user that you want to deactivate.
3. Then, click on the checkbox next to the user you want to deactivate, and click on the **Deactivate** button. Alternatively, you can also deactivate a user by clicking on the **Deactivate** icon from the **Actions** tab next to a user.
4. A message will pop up asking **Are you sure you want to deactivate the selected users?**. Click on **OK** to deactivate them or on **Cancel** if you don't want to deactivate the selected users.

To deactivate all users listed on a page, click on the checkbox next to the **Name** column (which will select all the users), and click on the **Deactivate** button.
Activating a user

If we want to make an inactive user active again on the portal, we need to restore or activate that user account. Just follow these steps:

1. Click on Users and Organizations under the Users category of Control Panel.
2. Select Show value as Inactive below the search box, or click on the gear icon beside the search box and select the status as Inactive in the search form. Then click on the Search button to display a listing of deactivated users.
3. Click on the checkbox located next to the user you want to reactivate, and then click on the Restore button. Alternatively, you can also reactivate a user by clicking on the Activate icon from the Actions tab on the right-hand side of the user.

To restore all users listed on a page, click the checkbox next to the Name column (which will select all the users), and click on the Restore button.

Deleting a user

If a user doesn't exist anymore, we need to delete him/her from the portal as follows. User accounts must be deactivated before they can be deleted.

1. Click on Users and Organizations under the Users category of Control Panel.
2. Select Show value as Inactive below the search box. Or click on the gear icon beside the search box and select the status as Inactive in the search form. Then, click on the Search button to display a listing of deactivated users.
3. Click on the checkbox located next to the user you want to delete, and click on the Delete button. Another way to delete a user is by clicking on the Delete icon from the Actions tab on the right-hand side of the user.
4. Messages will pop up asking Are you sure you want to permanently delete the selected users? Click on the OK button to delete, or click on the Cancel button if you don't want to delete the selected users.
5. To delete all users listed on a page, click the checkbox located next to them in the Name column. Then, click on the Delete button.
Impersonating a user

Administrators and normal users with the Impersonate User function can conveniently review updates performed by other users. For example, the administrator gives permissions to the user Lotti Stein to edit all users in the Palm Tree Publications US location. To verify that the edit permission has been correctly given to a user, the administrator can sign in as that user. Alternatively, the administrator can search for the user in Users and Organizations under the category User of Control Panel and click on the Impersonate User icon from the Actions tab on the right-hand side of the user. By using the Impersonate function, the administrator can impersonate the user to review updates without having to sign in as the user.

Using the Actions tab

As mentioned earlier, each user has their public pages and private pages. These pages can be managed by clicking on the Manage Pages icon from the Actions tab on the right-hand side of the user. In addition, you can set up permissions for a specific user by clicking on the Permissions icon from the Actions tab on the right-hand side of the user.

User settings

As you can see, forms to add and edit users are different. When adding a user, you will see the User Information section where Details, Organizations, and Personal Site are visible, whereas when editing a user profile, you will also be able to see the rest of the enabled sections, such as Identification, Miscellaneous, and User Information.

For example, while editing the user profile, you would be able to assign roles, organizations, and sites to the user without leaving the form. Any changes will be saved, along with the rest of the form, when the Save button is clicked.

The portal provides a user administration tool following design patterns to achieve better usability and more flexibility. You can customize the preceding features by overriding properties.
User forms

User forms can be configured easily. Two kinds of forms are identified: add form and update form.

- The following properties are set for the add form by default in portal.properties:
  
  ```
  users.form.add.main=details,organizations,personal-site
  users.form.add.identification=
  users.form.add.miscellaneous=
  
  As shown in the previous code, you can input a list of sections that will be included as part of the user form when adding a user. For the add form, the main section has the item details, organizations, and personal site. This is the reason that when adding a user, you will see only one section: User Information, with details, organizations, and personal site.
  
  - The following properties have been set for the update form by default in portal.properties:
    
    ```
    users.form.update.main=details,password,organizations,sites, user-groups,roles,personal-site,categorization
    users.form.update.identification= addresses,phone-numbers,additional-email-addresses,websites,instant-messenger,social-network,sms,open-id
    users.form.update.miscellaneous= announcements,display-settings,comments,custom-fields
    
    As shown in the previous code, you can input a list of sections that will be included as part of the user form when updating a user. For the update form, three sections (User Information, Identification, and Miscellaneous) are available. For this reason, you’ll see these sections when editing a user profile.
  ```

  These properties can be overridden in portal-ext.properties. For example, you can hide or add new items to a given section.

Overriding user-related properties

User-related properties can be overridden. By default, the following properties have been set in portal.properties:

```
users.delete=true
users.screen.name.allow.numeric=false
users.screen.name.always.autogenerate=false
users.email.address.required=true
```
As shown in the previous code, you can set the users.delete property to false if the users cannot be deleted. Similarly, you can set the users.screen.name.allow.numeric property to false. Then, the screen name will always non-numeric. You can set the users.screen.name.always.autogenerate property to true to always autogenerate user screen names even if the user gives a specific user screen name.

In the same way, you can set the users.email.address.required property to false if you want to be able to create users without an e-mail address. Note that not requiring an e-mail address would disable some features that depend on an e-mail address being provided.

Again, you can set the maximum file size for user portraits using the users.image.max.size property. You can use a value 0 for the maximum file size to indicate unlimited file size. The users.update.last.login property is set to true by default to record the last login information for a user. The users.search.with.index property is set to true by default to search users from the index. Set this to false to search users from the database. Note that setting this to false will disable the ability to search users based on Custom Attributes.

Note that Custom Attributes is a good feature of Liferay that allows you to add additional fields to existing models/entries to meet new requirement out of the box. Liferay provides custom fields for many things that are out of the application, such as Blogs, Message Boards, Users, Organizations, Roles, Sites, and so on, you can visit the Control Panel | Configuration | Custom Fields for more details.

In the case of users, you might need to add additional fields, such as a User's bank details or credit card details for a shopping cart application; custom fields is the best solution.

Alternatively, you can override these properties in portal-ext.properties.
**Sites**

Sites are a set of pages that display content and provide access to specific applications. Sites can have members, which are given exclusive access to specific pages or content.

Actually, sites are special groups that have a set of users or a set of user groups. That is, a site can have a set of users associated. Sites are used to represent a set of users who share common interests. An organization can be associated and unassociated to an existing site whenever required for business needs.

In Liferay, the site idea allows the user to perform the task easily and faster using predefined site templates:

- We can work on multiple sites with respect to WCM, Documents and Media, and so on.
- Enhanced staging includes automatic versioning with history and undo for sites and pages.
- Content display based on user profile attributes offer higher levels of personalization.
- Simplified site management via hierarchical site templates is also offered.

If you have not created the site while creating the Organization, you can create the site separately and map the site with the organization manually.

There may be different possibilities, where an Organization is not required for a simple site, such as a site for program event advertisement.

From Site Control Panel, you can set the settings of multiple sites. This is accessed only by the portal's Administrator.

![Control Panel](image)

*Figure 3.14: Sites*
In Liferay 6.2, Sites has been defined in a different section. Once you click on Control Panel | Sites | Sites, this will display all the sites under the portal. You can see in the preceding screenshot that Palm Tree is a private site. It has one user and one Organization mapped with it. Also, there are four child sites under it.

Note that we created the sites while creating the organization. Created sites have the same name as per the organization name. It has taken the same hierarchical structure as that of organization. You would notice that Palm Tree has four child sites. In the preceding screenshot see Palm Tree's This site has 4 child sites link, which will redirect you to the list of child site pages.

Let's click on the This site has 4 child sites link. You can see the right-hand side menu with the actions Site Administrations, Add Child Site, Go to Public Pages, Deactivate, and Delete. Each child site has actions that allow you to add another child site under it.

The following screenshot shows all the child sites under Palm Tree:

![Figure 3.15: View all sites under Palm Tree](image-url)
Let's create an **Engineering department** site under the **Palm Tree** site:

1. Click on **Sites** under the **Sites** category of **Control Panel**.
2. Click on the **Add child site** link in the **Action** tab of the Palm Tree site.
3. Fill in **Site Name (Engineering department)** and **Description**, and select the **Membership Type** as **Open** from the options (**Open**, **Restricted**, and **Private**). Select Public pages and enable the propagation of changes from the site template.
4. Finally, **Save** the changes and go by the following screenshot.

This screenshot shows the site settings page for the engineering department:

![Figure 3.16: Creating a new site](image)

Now, after saving the site, you need to map/associate the site with the organization. For that, you need to configure the site memberships and map the engineering department.
As mentioned, a site can be open, restricted, or private:

- **Open**: This allows portal users to join immediately.
- **Restricted**: The user can't join the site directly; only the site Administrator can add the user. However, a User can request for membership.
- **Private**: It is not visible to nonmembers of the site, membership requests are not possible, and the user is only added by a private Site Administrator.

### Site Memberships

**Site Memberships** allows you to add members to the particular site, which you have selected in the **Site Content** category.

Let's add organization to the site:

1. Click on **Site Memberships** from the left-hand side menu. Refer to the following screenshot.
2. Click on the **Organizations** tab, and then click on the **Assign Organization** link.
3. Select the organization from the list, say **Engineering Department**, by ticking in the checkbox beside the organization name.
4. Save the change. You have successfully associated the organization with a Site.

This screenshot shows the assigning of Users, Organizations, and User Groups to the site:

![Figure 3.17: Adding organization to site](image)

Figure 3.17: Adding organization to site
Site Memberships allows you to add individual Users, Organizations, and User Groups in the selected site in the left-hand side panel. In the preceding screenshot, the engineering department is selected.

Site Administrator or Organization Administrator can’t create Role anew; however, they can create Team. A Team role is similar to Site and Organization role. The purpose of the team is to empower site and organization administration to delegate responsibility without giving them the ability to create roles.

Team

Team provides great flexibility to the site administrator to create various sets/teams of users and permissions for site-specific functions. It provides the feature of permission to specific set of users, for particular functionality in the site. Teams can be scoped to collecting permission within a single site.

Let’s create a team—Engineering Team—for the Engineering Department site, the permission defined for it will be only available to the Engineering department site only; no other site can have the same permission.

Creating Team

Let’s create a team—"Engineering team"; follow these steps:

1. Click on Site Teams under the Engineering department.
2. Click on Add Team.
3. Enter the name and description of the team.
4. Click on the Save button to save the changes.
5. Now, you can assign the user/members to the Team.
6. Click on the action button on the right-hand side of the team name and select Assign Members.
7. Now, you will be able to see two tabs, Users and User Groups. And below that other tabs—current and available.
8. Click on the available tab and select users. Finally, click on the Update Associations button. You can add the User group too.

Now, you can add the permission for Team by just clicking on action and selecting permissions.
Site Teams give an advantage to the site administrator to create a group within the site. The following screenshot shows the site team list in the engineering department:

![Figure 3.18: Team creation for the Engineering Department site](image)

**Site Templates**

Site Templates allow you to define a hierarchical set of pages and web content that can be used as a template to create sites. Administrators have the right to define and edit site templates as well as their permissions.

Site Templates can be used when creating Users, Organizations, and Sites. The creation form will show select boxes to use a site template for either public pages or private pages (or both).

When a site template is applied, a copy of its pages and contents is performed. There is no link to the original template, so any change to the site template will not have any effect on the pages that originated from it.

It's also possible to apply a site template to users and organizations as long as they don't have any existing public/private page (otherwise, there could be conflicts).
You can create your own templates as per organization requirement. The following screenshot shows the two default site templates:

Let's create a **Palm Tree Community Site** template:

1. Click on **Site Templates** under the **Sites** category in **Control Panel**.
2. Click on the **Add** button.
3. Fill the input fields' name and description, check in the **Active** checkbox, and the **Allow Site Administrators to Modify the Pages Associated with This Site Template** checkbox.
4. Save the changes.

This screenshot displays the creation of a new site template with the name **Palm Tree Community**.
Authentications

As mentioned earlier, you don't need to type users all at a time. You can add users in bulk via LDAP and SSO. At the same time, you might require the facility for strangers to create accounts and for the users to then request their password via the Forgot Password function. How can you customize these features? Let's take a deeper look at authentications.

General configuration

Generally speaking, user login functions are configurable in the portal. By default, authentication is based on the portal database. However, as an administrator, you would be able to set up authentications based on LDAP and SSO other than that on the portal database.

As shown in the following screenshot, you could set up the portal so that users can authenticate by e-mail address, screen name, or user ID. You could allow users to automatically log in, request forgotten passwords, and request password reset links. You could also allow strangers to create accounts and create accounts with a company e-mail address (for strangers) and require them to verify their e-mail address.

Portal settings allows you to do settings for the whole portal. The following screenshot shows the Authentication settings for the portal:

![Portal Settings and Authentication](image-url)
Bringing in Users

For example, imagine that you are planning to set authentication by screen name. You can do it as follows:

2. Select By Screen Name from the How do users authenticate? drop-down menu. There are other options, such as By Email Address and the By User ID drop-down menu.
3. Click on the Save button.

What's happening?

As you can see, the following items are set to true: Allow users to automatically log in? Allow users to request forgotten passwords? Allow users to request password reset links? Allow strangers to create accounts — only the item, that is? Allow strangers to create accounts with a company e-mail address? Require strangers to verify their email address? This is all set to false by default.

The portal has the following settings by default in portal.properties:

```
basic.auth.password.required=true
company.security.auth.type=emailAddress
company.security.auth.requires.https=false
company.security.auto.login=true
company.security.send.password=true
company.security.send.password.reset.link=true
company.security.strangers=true
company.security.strangers.verify=false
```

As shown in the previous code, the portal sets the basic.auth.password_required property to true to require a password when using basic authentication. Moreover, the portal can authenticate users based on their e-mail addresses, screen name, or user ID. By default, the company.security.auth.type property is set as emailAddress. You can set the company.security.auth.requires.https property to true to ensure that users log in with HTTPS. The portal sets the company.security.auto.login property to true to allow users to select the "remember me" feature to automatically log in to the portal, sets the company.security.send.password property to true to allow users to ask the portal to send them their password, and sets the company.security.strangers property to true to allow strangers to create accounts and register themselves on the portal. In addition, if strangers who create accounts need to be verified via e-mail, you can set the company.security.strangers.verify property to true.
Auto login

The portal has specified auto login as follows in portal.properties:

```properties
auto.login.hooks=com.liferay.portal.security.auth.CASAutoLogin,
.com.liferay.portal.security.auth.FacebookAutoLogin,
.com.liferay.portal.security.auth.NtlmAutoLogin,
.com.liferay.portal.security.auth.OpenIdAutoLogin,
.com.liferay.portal.security.auth.OpenSSOAutoLogin,
.com.liferay.portal.security.auth.RememberMeAutoLogin,
.com.liferay.portal.security.auth.SiteMinderAutoLogin
auto.login.ignore.hosts=
auto.login.ignore.paths=
```

As shown in the preceding code, the `auto.login.hooks` property inputs a list of comma delimited class names, such as CAS, OpenID, OpenSSO, NTLM, SiteMinder, and so on, that implement `com.liferay.portal.security.auth.AutoLogin`. These classes will run in consecutive order for all unauthenticated users until one of them returns a valid user ID and password combination. If no valid combination is returned, then the request continues to process normally. If a valid combination is returned, then the portal will automatically log in that user with the returned user ID and password combination.

In addition, the `auto.login.ignore.hosts` property sets the hosts that will be ignored for auto login, and the property `auto.login.ignore.paths` sets the paths that will be ignored for auto login.

LDAP authentication

The portal supports LDAP authentication. The portal provides support, by default, for Apache Directory Server, Fedora Directory Server, Microsoft Active Directory Server, Novell eDirectory, OpenLDAP, OpenDS, and so on.

This section will show you how to set up LDAP authentication by examples. For instance, the enterprise, Palm Tree Publications, is planning to store and manage all users in an LDAP server (that is, Apache Directory Server). The LDAP server, in this example, has the following information:

```properties
Base Provider URL: ldap://docs.palmtree.com:10389
Base DN: ou=book,ou=system
Principal: uid=admin,ou=system
Credentials: secret
```
Thus, you can set authentication through the previous LDAP server. Let's do it by following these steps:

2. In the following settings, check Enabled and Required. Note that when the required checkbox is selected, the authentication will be done only on LDAP servers.
3. Click on the Add button under the LDAP Servers section.
4. Input LDAP-DOCS as the server name.
5. Select the default value Apache Directory Server.
6. Under the Connection section, enter the Base Provider URL: ldap://docs.palmtree.com:10389; Base DN: ou=book, ou=system; Principal: uid=admin,ou=system; Credentials: secret.
7. Use default values in the Users, Groups, and Import/Export sections.
8. Select the Import Enabled checkbox under the Import/Export section if you want to import users in bulk.
9. Select the Export Enabled checkbox under the Import/Export section if you want to synchronize LDAP servers with the portal database.
10. Select the checkbox and use LDAP Password Policy under the Password Policy section if you are going to use the LDAP password policy.
11. Click on the Save button when you are ready.

**Lightweight Directory Access Protocol (LDAP)** is an application protocol used to query and modify directory services running over TCP/IP. A **Directory Information Tree (DIT)** is data represented in a hierarchical, tree-like structure consisting of the **distinguished names (DNs)** of the directory entries.
LDAP settings for the portal allow the portal Administrator to set the LDAP properties. The following screenshot illustrates the LDAP settings pages:

![LDAP setting](image)

**Figure 3.22: LDAP setting**

**Using LDAP effectively**

It is very important to choose a suitable security model at the beginning of the portal implementation. The authentication mechanism, storage for user data, security settings, and business rules are based on the security model that you choose.

The portal imposes authentication through the login ID of the user (e-mail address or user ID) and password. This is where you choose a security model (for example, database-based managed accounts, **Single Sign-on (SSO)**, or LDAP).

The portal imposes authorization by assigning a role to a specific user on a specific group. This is going to be the same, irrespective of which model you choose.

The security model that you choose (either database-based managed account or external systems, such as LDAP and SSO) will be based on the requirements of your enterprise.
In any case, you can't authenticate the portal against SSO and/or LDAP. Therefore, you will have to remove LDAP and SSO settings from the portal. Fortunately, you could run the following query:

1. Shut down the portal.
2. Run the following SQL script:
   
   ```sql
   Delete from PortletPreferences where portletId = 'LIFERAY_PORTAL';
   ```
3. Restart the portal.

The previous query removed all settings related to the LIFERAY_PORTAL portlet ID.

**LDAP authentication chain**

There are two kinds of authentication chains supported in the portal: LDAP with portal database and multiple LDAP servers.

When configuring an LDAP server, you would have the ability to enable the LDAP server and make it required. If the LDAP server was marked as required, then authentication only goes through the LDAP server. If the LDAP server wasn't marked as required, then authentication goes through the LDAP server first and then goes through the portal database. Suppose that you have a lot of users on an LDAP server and a set of users existing in the portal database, then you could mark the LDAP server as nonrequired, building an authentication chain. Authentication first goes through the LDAP server and then through the portal database. In this example, you integrated two-pool users both in LDAP and in the portal database.

The portal allows authentication from multiple LDAP servers. Multiple LDAP servers can be specified in Control Panel under Configuration section | Portal Settings | Authentication | LDAP. The portal will try to authenticate them from top to bottom in order.

**CAPTCHA**

A CAPTCHA is a program that can generate and grade tests that humans can pass but current computer programs cannot. CAPTCHA have several applications for practical security, including, but not limited to, preventing comment spam in blogs, protecting website registration, online polls, preventing dictionary attacks, search engine bots, worms, and spam. Refer to [http://www.google.com/recaptcha/intro/index.html](http://www.google.com/recaptcha/intro/index.html).
The portal has specified a set of properties for CAPTCHA in portal.properties.

```properties
captcha.max.challenges=1
captcha.check.portal.create_account=true
captcha.check.portal.send_password=true
captcha.check.portlet.message_boards.edit_category=false
captcha.check.portlet.message_boards.edit_message=false
```

As shown in the previous code, the `captcha.max.challenges` property sets the maximum number of CAPTCHA checks per portlet session. Set this value to 0 to always check. Set this value to a number less than 0 to never check. Unauthenticated users will always be checked on every request if CAPTCHA checks are enabled.

By default, the portal sets whether or not to use CAPTCHA checks for portal actions, creating an account via the property `captcha.check.portal.create_account` and sending a password via the property `captcha.check.portal.send_password`. In addition, the portal sets whether or not to use CAPTCHA checks for portlet actions, editing a category in the portlet Message Boards via the `captcha.check.portlet.message_boards.edit_category` property and editing a message in the portlet Message Boards via the `captcha.check.portlet.message_boards.edit_message` property.

You would be able to override the mentioned properties in portal-ext.properties.

**SSO authentication**

The portal also supports SSO integration. The portal provides integration with CAS, NTLM, OpenID, OpenSSO, and SiteMinder by default.

This section will show you how to set up SSO authentication with the help of examples. Suppose that the enterprise Palm Tree Publications has a CAS server with the URL `http://docs.palmtree.com/cas-web` and it is planning to set authentication through the SSO CAS server directly, as shown in the following screenshot. Let's do it by following these steps.

2. Click on the CAS tab.
3. Select the Enabled checkbox.
4. Select the Import from LDAP checkbox. If this is checked, then users authenticated from CAS, who do not exist in the portal, will be imported from LDAP. Note that LDAP must be enabled.
5. Input the following values as an example:
   - **Login URL**: http://docs.palmtree.com/cas-web/login
   - **Logout URL**: http://docs.palmtree.com/cas-web/logout
   - **Server name**: www.bookpub.com:8080
   - **Server URL**: http://docs.palmtree.com/cas-web

6. Click on the **Save** button.

Now, you are ready to use the SSO CAS. Similarly, you can integrate OpenID, NTLM, OpenSSO, and SiteMinder with the portal.

Portal Administrator has permissions to set the **Central Authentication Service (CAS)** settings; here's the screenshot for the CAS settings page:

![Figure 3.23: The CAS SSO configuration](image)

Figure 3.23: The CAS SSO configuration
OpenID authentication

We can also use OpenID as authentication. Let’s enable OpenID authentication by following these steps:

2. Click on the OpenID tab.
3. Select the checkbox to enable OpenID.
4. Click on the Save button to save the changes.

Now, it is ready for users to log in through OpenID. OpenID is a decentralized single sign-on system. Refer to http://openid.net.

By default, the portal has the following configuration in portal.properties:

```PERTIES
open.id.auth.enabled=true
```

As shown in the preceding code, the portal sets the property open.id.auth.enabled to true to enable OpenID authentication. If this property is set to true, then the auto.login.hooks property must contain a reference to the com.liferay.portal.security.auth.OpenIdAutoLogin class. OpenID authentication can be disabled by setting the following property in portal-ext.properties instead of the preceding Web UI:

```PERTIES
open.id.auth.enabled=false
```

Once we set open.id.auth.enabled to false, either by property or by Web UI, OpenID authentication gets disabled, and the OpenID sign-in link will get hidden in the Sign In portlet.

Open SSO authentication

Sun Open SSO Enterprise (short for Open SSO—renamed OpenAM) is the single solution for web access management, federation, and web services security. Refer to http://opensso.dev.java.net.

The portal has specified the following properties to integrate Open SSO into portal.properties and the corresponding web UI:

```PERTIES
open.sso.auth.enabled=false
open.sso.ldap.import.enabled=false
```
Bringing in Users

open.sso.service.url=http://openssohost.example.com:8080/opensso
open.sso.screen.name.attr=uid
open.sso.email.address.attr=mail
open.sso.first.name.attr=givenname
open.sso.last.name.attr=sn

As shown in the preceding code, Open SSO is disabled by default since the open.sso.auth.enabled property is set to false. You could set this to true to enable Open SSO. If the property is set to true, then the auto.login.hooks property must contain a reference to the com.liferay.portal.security.auth.OpenSSOAutoLogin class.

When enabling Open SSO, you need specify the properties login URL open.sso.login.url, logout URL open.sso.logout.url, and service URL open.sso.service.url. You need to override these properties in portal-ext.properties.

For example, let's say that Open SSO has been installed at a service URL, http://liferay.palmtree.com:8090/opensso, and the Liferay Portal is installed at http://liferay.palmtree.com:8080. If so, then you would have the following values:

- **Login URL:**

- **Logout URL:**

In addition, the following attributes are configurable: firstName=cn, lastName=sn, screenName=givenName, emailAddress=mail via properties open.sso.screen.name.attr, open.sso.email.address.attr, open.sso.first.name.attr, and open.sso.last.name.attr.

Note that if Open SSO and Liferay are installed in the same domain with a default configuration, such as Encode Cookie Value = True, then it works fine. If Open SSO and the portal are installed in different domains with the same settings, then it will get the redirect loop. However, anyway Open SSO and the portal should work well across domains. This issue is still open at the time of writing this.
General settings

Let's also say that the admin Palm Tree changed **Main Configuration Name** and **Mail Domain** to bookpub.com and updated the company logo to PalmTree_logo.png under **Portal Settings**, as shown in the following screenshot:

1. Go to **Control Panel | Configuration | Portal Settings | Display Settings**.
2. You will find the **Language and Time Zone** section. Below that, you will find the **Logo** section.
3. Navigate to the logo file from the local system and save it.

Portal **Display Settings** allow the portal Administrator to set the settings for the whole portal. If any change in settings affects the whole portal, you will get a screenshot displaying the **Display Settings** page:

![Figure 3.24: Portal Settings](image-url)
Bringing in Users

Roles

Roles are groupings of users that share a particular function within the portal according to a particular scope. Administrators can add roles that can be granted permissions to various functions within portlet applications.

Roles in Liferay define permissions according to their scope. Liferay has roles with respect to Portal, Organization, and Site. Its roles are more drilled down and frame the bigger scope for Liferay Portal.

Let's see a role with a different scope. Roles have a lot of emphasis all over the portal. We need to make sure all the roles have the right entitlements for each and every activity. The following screenshot shows this:

Figure 3.25: Roles
As you can see, out-of-the-box roles are defined for different scopes with respect to Portal, Organization, and Site:

- **Portal (Regular User):**
  - **Administrator:** Administrators are the super users—they have the right to do anything
  - **Power user:** A power user has their owner personal site and can be distinguished from normal users
  - **User:** Authenticated users should be assigned this role
  - **Guest:** Unauthenticated users always have this role

- **Organization:**
  - **Organization Administrator:** These are the super users of their Organization but cannot give the right to other users as organization administrators.
  - **Organization Owner:** These are owners and super users of their organization. They can also assign organization roles to users.
  - **Organization User:** All users who belong to an organization have their role within that organization.

- **Site:**
  - **Site Administrator:** These are super users of their site but can't assign other users as site administrators.
  - **Site Owner:** These are owners and super users of the site and can assign site roles to users.
  - **Site Members:** All users who belong to a site have this role within that site.

The preceding roles cannot be removed. Well, in Liferay, you can create your own role as per organization requirement. Let's say Palm Tree Publications needs roles for users to handle the Message Board portlet in their page. Let's name these roles **MB Topic Admin** and **MB Category Admin**.
Adding a role
First of all, we need to create a role called MB Topic Admin. Let’s do that now:

1. Click on Roles under the Users category of Control Panel.
2. Click on the Add button and select a type with the Regular User value from the options: Regular User, Organization, and Site.
3. Enter an MB Topic Admin value in the Name input field as well as that of the Title input field and the Description input field.
4. Click on the Save button if you are ready.

Other roles can be created in a similar way. After adding roles, we can view them.

Editing a role
To edit a role, click on Roles under Users of Control Panel first. Then, locate the role you want to edit. Click on the Edit icon from the Actions tab on the right-hand side of the role, or click on any links of the role. In the edit page, type changes in the Name, Title, and Description input fields. Then, click on the Save button to save the changes.

Deleting roles
For some reason, a role does not exist anymore. We can delete this role from the portal by following these steps:

1. Click on Roles under the Users category of Control Panel first.
2. Locate the role (for example, MB Category Admin) that you want to delete.
3. Then click on the Delete icon from the Actions tab on the right-hand side of the role. A screen will appear that asks whether you want to permanently delete the selected roles.
4. Click on the OK button.

Note that you can delete a customized role whether it has members associated with it or not. When a customized role gets deleted, membership and permission definitions would get removed permanently.
Assigning members

We can assign a particular role to a specific user. This can be done by following these steps:

1. Click on Roles under the Users category of Control Panel.
2. Click on the Assign Members icon from the Actions tab next to the role that you want to assign members to.
3. Since the Current tab is selected by default, there are no users associated with this role. Therefore, click on the Available tab in order to search for the user of your choice.
4. Check the checkbox next to the user.
5. Click on the Update Associations button. If you need to verify this, it can be done by clicking on the Current tab to confirm that the association was set successfully.
6. If you as an administrator decided that this association should be discarded, then you can uncheck the checkbox next to the user's name and click on the Update Associations button again.

Similarly, we can assign other entities, (such as site, organization, location, or user group), to a regular, customized role or system roles (such as Administrator, Power User, and so on). To do so, we just need to repeat the preceding steps. In fact, an identical result would have been achieved by associating the previously selected role with an appropriate entity, instead of directly to the user, if they were a member of an entity.

Authorization

As mentioned earlier, authorization is a process of finding out whether the user, once identified, is permitted to access a resource. This process is implemented by assigning and checking permissions (using roles).

Permission

Permission is an action on a resource. The portal provides a full security model incorporated into fine-grained permissions and role-based access control. It will give administrators full control over access and privileges to portlets, layouts, and groups within the portal. This means that there are two main features on permissions.

First of all, permissions are fine-grained in the portal. For example, for a given page, permissions could be Add Discussion, Delete Discussion, Update, Update Discussion, Permissions, Delete, and View.
Bringing in Users

The following table shows the permission actions on pages:

<table>
<thead>
<tr>
<th>Permission name</th>
<th>Permission functional description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Discussion</td>
<td>This provides the ability to add discussions (comments) on a page</td>
</tr>
<tr>
<td>Delete Discussion</td>
<td>This provides the ability to delete discussions (comments) on a page</td>
</tr>
<tr>
<td>Update</td>
<td>This provides the ability to update the current page</td>
</tr>
<tr>
<td>Update Discussion</td>
<td>This provides the ability to update discussions (comments) on a page</td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view the current page</td>
</tr>
<tr>
<td>Permissions</td>
<td>This provides the ability to assign permissions on a page</td>
</tr>
<tr>
<td>Delete</td>
<td>This provides the ability to delete a page</td>
</tr>
</tbody>
</table>

Secondly, permissions are always assigned through roles in the portal. For example, the user Rolf Hess is a member of the role MB Topic Admin. As mentioned in the previous chapter, we have the Welcome page in the Guest community. Now, we are going to assign the permission View on that page for Rolf Hess.

**Defining permissions on a role**

A role is the set of collection of permission to be assigned to users who belong to it. So, you have to assign the members to the role and define the permission.

Let's define the permission for MB Topic Admin. To do that, perform the following steps:

1. Click on Roles under the Users category of Control Panel. You will be shown a list of all the roles.
2. Choose the role for which you want to define the permission, say MB Topic Admin.
3. Click on the Action button and select Define Permissions; you will see a list of all the permissions defined for the role. However, for MB Topic Admin, no roles are defined. So, no list will appear and this message will be shown: **This role does not have any permission.**
4. On the left-hand side, all the categories of permission are listed with respect to portal components.

5. Select Message Boards from Site Administration | Applications. You will be able to see the different permissions for the particular role.

6. Now, select the permission from the list in Message Boards, such as Messages, Message Boards category, Message Board Message, and Message Board Threads. This has several permission options, such as add, delete, view, add file, and so on.

7. Finally click on Save to save the selected permission option.

In Liferay, these permissions fall under various categories, such as Control Panel: Users, Sites, Apps and Configuration; Site Administration: Pages, Content, Users, Configuration, Applications; My Account: Account Settings, My Pages, My Workflow Task, and My Submissions. For scoped roles, you need to click on the Options link on individual portlets.

Site Content permissions cover the content the installed portlets create. If you pick one of the portlets from this list, you'll get options to define permissions on its content. For example, if you pick Message Boards, you'll see permissions to create categories and threads or delete and move topics.

Application permissions affect the application as a whole. So, using our Message Boards example, application permissions might define who can add the Message Board portlet to a page.
Bringing in Users

The control panel permissions affect how the portlet appears to the user in the control panel. Some control panel portlets have a **Configuration** button, so you can define who gets to see that as well as who gets to see an application in the control panel. The following screenshot shows this:

![Permission defined for the Message Board](image)

You can also limit the scope of the permission to a particular user role by clicking on the limit scope of the user with respect to application permission. As you can see in the preceding screenshot, in which the **MB Topic Admin** role is defined for the message board with the portal scope and the Palm Tree organization, you can easily change the scope and add multiple scopes.
Permission algorithms

The portal includes a pretty flexible permission system based on the concepts of roles, permissions, and resources, which provide several different implementations for the algorithm used to check whether a given user has permissions to perform certain actions or not.

RBAC stands for **Role Based Access Control**. It is a permission system, in which permissions are always assigned through roles. The RBAC implementation was started in Portal 5.1 as a way to improve the existing system, especially in terms of ease of use and performance. There are two algorithms for RBAC implementation at the time of writing this:

- Algorithm 5 was introduced for Portal 5.1 or above. It uses a regular normalized implementation.
- Algorithm 6 was introduced for Portal 5.3 or above. Algorithm 6 is an improved version of Algorithm 5. It provides exactly the same functionality as that of Algorithm 5, but it uses bitwise operations for even faster speed.

In particular, it’s possible to assign permissions not only through roles, but also directly to organizations, sites, and individual users. However, this flexibility has a cost in performance and UI complexity.

What’s happening?

The portal has set a default permission algorithms in `portal.properties`. The default value of the permission algorithm for Version 5.0 or below is 2. The default value of the permission algorithm for versions 5.1 and 5.2 is 5. Starting from Version 5.3, the default value of the permission algorithm is 6. This is as follows:

```
permissions.user.check.algorithm=6
```

This code sets the algorithm used to check permissions for a user. This is useful so that you can optimize the search for different databases. Of course, depending on the data, you can use different algorithms. To do so, just override the property `permissions.user.check.algorithm` in `portal-ext.properties`:

```
permissions.checker=com.liferay.portal.security.permission.AdvancedPermissionChecker
```
Bringing in Users

If you see `portal.properties`, then `permissions.checker` is mapped with `com.liferay.portal.security.permission.AdvancedPermissionChecker` by default to check permissions for actions on objects. This class can be overridden with a custom class that implements `com.liferay.portal.security.permission.PermissionChecker`.

`permissions.view.dynamic.inheritance=true`

As shown in the preceding code, the portal sets the `permissions.view.dynamic.inheritance` property to `true` to automatically check the view permission on parent categories or folders when checking the permission on a specific item. For example, if the property was set to `true` to be able to have access to a document, a user must have the View permission on the document's folder and all its parent folders.

Configuration of portal navigation

Once you have completed all the settings, you can configure the portal navigation. In Chapter 2, Setting Up a Home Page and Navigation Structure for the Intranet, we configured the domain with `http://www.bookpub.com:8080`, so whenever you trigger the URL in the browser, it lands on the site page by default. Let's change the configuration for the Palm Tree site by following these simple steps:

1. Log in as the portal administrator and go to control panel | configuration | portal settings. You will see the Main Configuration page; in the same page, locate the Navigation section.
2. For Home URL, set the value `/web/palmtree/home`.
3. For Default Landing Page set value `/web/palmtree/home`.
6. Finally, save the changes by clicking on the Save button.
Follow this screenshot to complete the configuration for the portal navigation of Palm Tree site.

![Portal Settings for navigation](image)

Now when you trigger the URL `http://www.bookpub.com:8080` in the browser, you will land on the Palm Tree home page. Note that on getting the Palm Tree home page URL, you need to copy the URL from `/web` until the end.
Summary

This chapter first introduced you to creating and managing organizations and locations. We saw how we can add and manage users (for example, view, search, update, deactivate, restore, delete, and impersonate) and how we can add and manage user groups (for example, view, search, update, delete, and assign). It also introduced you to sites, site membership, and site templates. Then, it introduced integration into different authentication servers, such as LDAP, CAS, NTLM, OpenID, and Open SSO. Furthermore, it introduced you to managing permissions and showed how to add roles and manage roles (for example, view, search, update, delete, and assign). You learned that: a resource is a base object, a permission is an action on a resource, a role is a collection of permissions, roles can be assigned to a user, user group, site, location, or organization, a user is an individual who perform tasks using the portal, organizations represent the enterprise-department-location hierarchy, a location is a special organization, with one and only one parent organization associated and with no child organization associated, a community is a special group with a flat structure, and a user group is a special group with no context, which may hold a number of users.

In the next chapter, you will go through the forums (Message Board), categorization, tags, and Asset Publishing, where you will learn more about content and communication between users in a portal through Message Board.
In the intranet website bookpub.com of the enterprise Palm Tree Publications, it would be nice to provide an environment for employees to discuss book ideas and proposals. It would also be nice to share important and interesting content with other users inside or outside of the intranet website, content tagging, and publishing. The Message Boards portlet (also called discussion forums) provides a full-featured discussion forums solution. Tags and taxonomies provide a way of organizing and aggregating content. The Asset Publisher portlet allows us to publish any type of content, including Message Boards messages as if it were web content—filtering either through a set of publishing rules dynamically or by manual selections.

In the preceding chapters, we revealed the page and group boxes in the portal-group-page-content pattern. In this chapter, we're going to open the content box and first introduce you to the item "Message Boards" in the content box. This chapter will introduce you to Message Boards first and focus on how to use Message Boards, how to configure the portlet, and how to implement the preceding requirements within Message Boards. Then, we will address taxonomies to aggregate content—for example, Message Boards threads and posts. Finally, it will introduce us to the Asset Publisher portlet to publish any type of content, including Message Boards messages through Categories or Tags.

By the end of this chapter, you will have learned how to:

- Manage categories, threads, and posts of Message Boards
- Set permissions on Message Boards categories, threads, and posts
- Manage tags, tag content, and display tags
- Set permissions on tags
Forums, Categorization, and Asset Publishing

- Manage categories, tag content, and display categories
- Set permissions on categories
- Configure Asset Publisher via Tags and Categories to publish the Message Board

**Message Boards**

In brief, Message Boards (portlet ID 19) is a full-featured forum solution with threaded views, categories, RSS capability, avatars, file attachments, previews, dynamic list of recent posts, and forum statistics. Message Boards work with the fine-grained permissions and role-based access control model to give detailed levels of control to administrators and users. This section will give examples of how to use, configure, and implement Message Boards.

In order to provide an environment for employees to discuss book ideas and proposals, we could use the Message Boards portlet of the Guest public pages as an example. In this section, suppose that we’re using the Message Boards portlet for a page of Guest public pages. A category called Book Category will be created. The category Book Category contains four categories — Book Category A, Book Category B, Book Category C, and Book Category D.

As an administrator of the enterprise Palm Tree Publications, you would be able to create a page called Forums in the Guest public pages and then add the Message Boards portlet to the page Forums. Then, you are ready to create a category called Book Category. After doing that, add four subcategories to the category Book Category; they are "Book Category A", "Book Category B", "Book Category C", and "Book Category D".

Of course, you can customize Message Boards in Control Panel instead of doing the same on a specific page. You may refer to the scope of Message Boards in the coming section. Message Boards are one of the most widely used collaboration features and are called discussion forums. They allow us to post messages (threads and posts) on a website for others to read. These messages are sorted within categories.

You can configure Message Boards by clicking on the gear icon beside the portlet title bar and clicking on Configuration. You will be able to see the Setup tab and a few other tabs. Under the Setup tab, you will be able to configure for the Message Boards e-mail features, thread priorities, and user ranking.
Managing categories

As discussed previously, you can create categories and subcategories. Let's see the steps to create categories for Message Boards. Log in as Site Administrator of the enterprise Palm Tree Publications. Now, you will be able to create the category Book Category and subcategories Book Category A, Book Category B, Book Category C, and Book Category D. These subcategories will hold messages related to book ideas and proposals.

Adding categories

First of all, we are going to create a category called **Book Category**:

1. Go to the Home public pages, that is, Palm Tree.
2. Add a page called Forums if the page isn't there and change **Layout Template** to 1 Column by clicking on **Edit | Page** under the dock bar menu.
3. Add the **Message Boards** portlet to the Forums if the **Message Boards** portlet isn't already there.
4. Click on the **Add Category** button.
5. Enter the name **Book Category** and the description Books.
6. Permissions settings keep default settings. In order to configure additional permissions, click on the **More option** link, as shown in the next screenshot (*Figure 4.1*).
7. Configure **Mailing List**. We just use the default settings where no options are selected.
8. Click on the **Save** button to save the inputs.

You can definitely add other categories. Generally speaking, Message Boards can have many categories, and each category can have many categories called subcategories within it. That is, a category has a hierarchical structure. For example, the category **Book Category** contains four categories—Book Category A, Book Category B, Book Category C, and Book Category D. Let's create the category Book Category A by following these steps:

1. Locate the newly created category "Book Category", and then click on its name.
2. Click on the **Add Subcategory** button.
3. Enter the name **Book Category A** and the description **Liferay books**.
4. Permissions settings keep default settings. In order to configure additional permissions, click on the **More option** link.
5. Configure **Mailing List**—leave it at its default value where no option is selected.

6. Click on the **Save** button to save the inputs.

Adding **Category** is illustrated in the following screenshot; follow the screenshot to create a category inside Message Board:

![Figure 4.1: Adding a category to Message Board](image)

Of course, you can add as many other categories or subcategories as you want. After creating subcategories, such as Book Category B, Book Category C, and Book Category D, we can view the subcategories, as shown in the following screenshot. In particular, Book Category B and Book Category C use the default permission setting, whereas Book Category D uses only the View permission in the role's **Site Member** column.

---

**Highlights:** In Liferay 6.2, parent category option, which appears while creating a category, has been removed. A new action "move" has been implemented on the category, which will allow you to move the particular category under another, different category. This feature gives the flexibility to move any category or subcategory to another category (as a parent).
The following screenshot shows the list of subcategories under the Book category:

![Figure 4.2: View subcategories](image)

**Move** allows you to move the category under another category. You even get the option to merge the two categories. **Move to the Recycle Bin** allows you to move the category to Recycle Bin.

### Editing categories

Categories or subcategories are editable. For example, you may need to change the description of the "Book Category" category from "Books" to "Books discussion category". Let's do it this way:

1. Locate a category, for example, "Book Category", which you want to edit.
2. Click on the **Edit** icon from the **Actions** button next to the category.
3. Keep the name value as is and update the description of the selected category, that is, "Book Category" with a value "Books discussion category".
4. Click on the **Save** button to save the changes.

Also, you can update the name. For example, we can update the name "Book Category" with a value "Books". Similarly, we can edit a subcategory, for example, Book Category C, by updating the name with the value "Liferay books".
Optionally, with the help of **Move**, you can change the parent category of a specific category or subcategory by selecting a particular category as its parent category. You can also merge the current category with its parent category or remove its parent category. If you remove the parent category, the current category will become a category at the root level.

### Removing categories
Categories and subcategories are removable. You can't delete a category directly. You will have to move the unwanted category to the recycle bin. For instance, as the subcategory Book Category B doesn't exist anymore, you should remove it. Let's do it by following these steps:

1. Locate the "Books" category in order to list its subcategories.
2. Locate a subcategory, say Book Category B, which you want to delete.
3. Then click on the **Move to the Recycle Bin** icon from the **Actions** next to the category.
4. You will get message **The Message Boards Category Book Category B was moved to the Recycle Bin**. with an undo button. If you don't want to remove it, just click on **Undo**. It will revert back to its previous position.

Note that removing the category will remove all related subcategories, threads, and posts that belong to this category. Also note that Recycle Bin is in the site scope. So, each site has its own recycle bin.

### Viewing RSS feeds
You can view the RSS feeds of all Message Boards, categories, and subcategories. Suppose that you need to view RSS feeds of the "Books" category, you can do this as follows:

1. Select a category, for example, "Books".
2. Click on the **RSS** icon from the **Actions** next to the category.

Refer to the instructions in Chapter 6, *Blogs, WYSIWYG Editors, and Social Networking*.

### Managing threads
After adding categories and subcategories, we are ready to post new threads. Generally speaking, a forum can have many categories, and each category may have many subcategories and threads.
Adding threads

Let's say we're going to post new thread Let's discuss the book Liferay under the Liferay books category. We'll do it by following these steps:

1. Select the Books category where you want to find the Liferay books subcategory.
2. Select the Liferay books subcategory where you want to add a thread by clicking on the subcategory name.
3. Click on the Post New Thread button.
4. Enter the subject Let's discuss the book Liferay and the body Liferay Portal 6.1 Enterprise Intranets Book is one of the best Books for learning Liferay through the default WYSIWYG editor.
5. Keep the checkbox Mark as a Question as default—if this is selected, then subsequent replies to this message can be marked as answers.
6. Keep the Anonymous checkbox as default—if this is selected, then this message will be posted anonymously.
7. Select the checkboxes Subscribe Me and Allow Pingbacks; it is selected by default. Subscribe Me will subscribe the post with mail notification to the poster. Allow pingbacks helps users to trackback the posts.
8. Permissions settings keep default settings. In order to configure additional permissions, click on the More Options link. We just use the default settings, as shown in the following screenshot.
9. You can click on the Attachments link, which will allow you to add files to the particular thread post. In this example, we won't attach any documents.
10. You can click on the Categorization link, which allows you to input Tags. Input tags book and Liferay, or select tags from existing tags by clicking on the Suggestions button.
11. You can link the related assets with this post by clicking on Related Assets and assigning the respective assets to a particular thread post.
12. You save the post or preview it before publishing the post by clicking on the Save as Draft and Preview buttons. Finally, you can publish the post by clicking on the Publish button.

There are some more actions, which make Message Board more effective for the business use case. In addition, you can attach files by clicking on the Attach Files button and upload files afterwards. Similarly, you can preview the thread before publishing it by clicking on the Preview button.
In particular, adding a new thread with a subject, for example, **Let's discuss the book Liferay**, will add a post automatically with the same subject as that of the thread. Refer to the following screenshot to create a new thread:

![Figure 4.3: Adding a new thread](image)

Refer to the tags instructions in the next section for information on tags.
Likewise, you can add other threads. Note that there's a breadcrumb at the top of the page that eases navigation. After adding the thread **Where is the outline of the Liferay book?**, navigate through the breadcrumb to the **Liferay Books** category, which will list the threads, as shown in the following screenshot:

![Figure 4.4: Performing an action on a thread](image)

In the preceding screenshot, you can see many more links associated with the action button, which are **Edit**, **Permissions**, **RSS**, **Unsubscribe**, **Lock Thread**, and **Move to the Recycle Bin**. These links allow users to do certain jobs on **Thread Post**. Let's discuss them in brief:

- **Edit**: This allows you to edit the thread post
- **Permissions**: This allows you to set the access permissions for the thread
- **RSS**: This generates RSS for the particular thread
- **Unsubscribe**: This allows you to unsubscribe from the particular thread
- **Lock Thread**: This allows you to lock the thread so that people can view but cannot post. Conversely, you can unlock the thread by clicking on **Unlock Thread** if the thread is locked
- **Move**: This allows you to move the thread post from one category to another
- **Move to the Recycle Bin**: This allows you to move the subcategory to Recycle Bin

Let's discuss editing threads in detail.
Editing threads

Threads are editable too. You may need to change the subject of the thread Where is the outline of the Liferay book? to Did you find the outline of the Liferay book? Let's do this by following these steps:

1. Locate the thread Where is the outline of the Liferay book?, which you want to edit.
2. Click on the Edit icon from Actions next to the thread.
3. Update the subject of the selected category Where is the outline of the Liferay book? with the value Did you find the outline of the Liferay book?.
4. Click on the Publish button to publish the changes.

Of course, you can update the body and tags and select the checkbox Mark as a Question as well. Updating the subject of the thread, that is, Let's discuss the book Liferay? will automatically update the subject of the top-level post with the same subject as that of the thread.

Removing threads

Threads are removable too. For example, if the thread "Where is the outline of the Liferay book?" doesn't exist anymore, and you are required to remove it, do it by following these steps:

1. Locate the "Did you find the outline of the Liferay book?" thread, which you want to remove.
2. Then, click on the Move to the Recycle Bin icon from Actions next to the thread.
3. A screen will appear asking you whether you want to undo the action with the message The Message Boards Thread Did you find the outline of the Liferay book? was moved to the Recycle Bin. Click on the undo button to undo the action, else do nothing.

Note that removing a thread will delete all related posts that belong to that thread.
Viewing RSS feeds
You can view RSS feeds of threads as well as categories. Suppose that you need to view RSS feeds of the thread Let's discuss the book Liferay. Let's do it by following these steps:

1. Navigate the Books category and the Liferay books subcategory.
2. Locate the thread Let's discuss the book Liferay.
3. Click on the RSS icon under Actions located next to the thread.

Managing posts
Finally, we are ready to add more posts. As you can see, a forum can have many categories. Each category can have many subcategories and threads, and each thread can have a lot of posts associated with it. Fortunately, you are able to manage posts easily by editing posts, replying to posts, deleting posts, viewing posts, and so on. For instance, if the user David Berger is a member of Guest Site, then he can easily reply to posts and edit posts.

Adding posts
The user David Berger wants to reply to the thread Let's discuss the book Liferay with the message OK. Let's do it as follows:

1. Log in as David Berger, go to the Palm Tree Publications site, and then go to the forums page.
2. Locate the Books category and the Liferay books subcategory.
3. Click on the thread with the name Let's discuss the book Liferay.
4. Locate the post—for example, Let's discuss the book Liferay, to which you want to reply first.
5. Then click on the Reply icon in the top-right corner of the post.
6. Keep the default subject Re: Let's discuss the book Liferay. Input the value of the body "Liferay 6.2 has lot many functions and features" via an editor and also the select tags or input tags.
7. Permissions settings keep default settings. In order to configure additional permissions, click on the More Options link—here, we will use the default settings.
8. Keep anonymous as the checkbox's default state.
9. Click on the Publish button to publish the change.
In addition, you can attach a file by clicking on the **Attach Files** button and preview the post by clicking on the **Preview** button. Moreover, you can reply with a quote by clicking on the **Reply with Quote** icon in the top-right corner of the post.

Note that if Rolf Hess or any other user does not have the permission to access Message Board, then you have to provide the permissions by setting the permission in roles. Refer to the previous chapter for roles and permissions.

### Editing posts

Posts are editable. To edit a post, click on the **Edit** icon in the bottom-right corner of the post. You can change the subject and body via a **WYSIWYG** editor and tags. Then, you simply have to click on the **Publish** button to publish the changes or click on the **Cancel** button to cancel those changes. Optionally, you can attach a file by clicking on the **Attach Files** button or preview the post by clicking on the **Preview** button. You can save the post too by clicking on the **Save as Draft** button.

In particular, updating the subject of the top-level post, for example, **Let's discuss the book Liferay**, will automatically update the subject of the thread (that the top-level post belongs to) with the same subject as that of the top-level post.

In addition, you would be able to split the current post into a new thread as well as add an explanation post to the source thread. To do this, first log out, and then log in as an administrator to get the permission to split threads and ban users. Then, locate a post, click on the **Split Thread** icon, followed by selecting the checkbox **Add explanation post to the source thread**. Add a subject and a body to the explanation, and then click on the **OK** button. Optionally, you will be able to reply to the current post with a quote by clicking on the **Reply with Quote** icon. See the following screenshot (**Figure 4.5**). You can even click on **Quick Reply** to replay any post, which provides the **WYSIWYG** editor just below the post, and you can reply and publish it.

**Message Board** also provides voting and flag features for each post, where users are able to vote for the post and also raise a flag for each post.

### Banning users

In addition, you can ban a user if you have proper permissions. As previously stated, **David Berger** has a post called **OK** under the category **Book — Liferay Books**. As an administrator, you will see icon **Ban this user** under the logo of the user **David Berger**. If you need to ban this user, then simply click on the **Ban this user** icon. See the following screenshot (**Figure 4.5**). Then, you will see that the icon **Ban this user** becomes **Un-ban this user**.
When the user David Berger is logged in, he will see the message on Message Board: "You have been banned by the moderator".

As an administrator, you can unban the user David Berger simply by clicking on Un-ban this user. Then, you will see that the Un-ban this user label becomes Ban this user again.

**Deleting posts**

Posts are removable, too. For example, as the post Re: Let's discuss the book Liferay doesn't exist anymore, you can remove it. Let's do it by following these steps:

1. Locate the post Re: Let's discuss the book Liferay, which you want to delete.
2. Click on the Delete icon in the bottom-right corner of the post.
3. A screen will appear asking you whether you want to delete this. Click on OK to confirm the deletion, or on Cancel to cancel the deletion.

More interestingly, if the top-level post—for instance, Let's discuss the book Liferay, was deleted, the thread that the top-level post belongs to will be linked to the low-level post, such as Re: Let's discuss the book Liferay. If the top-level post, for example Let's discuss the book Liferay, is the only post in the thread, and if it is deleted, then the thread that the top-level post belongs to will also be deleted.

![Note: Only the current post will be deleted when deleting a post inside a thread. The lower-level posts related to the current post will have a link to the top-level post of the current thread.]

**Viewing posts**

All posts of a given thread can have different views, such as Combination View, Flat View, or Tree View. For example, the default view mode is Combination View. In order to change the current view mode to flat view, simply click on the Flat View button in the top-right corner, next to the navigation. Without a doubt, you can use Tree View.

You can also change the thread by clicking on the Previous or Next links, next to Threads. Moreover, you can change the categories by clicking on the category name on the breadcrumb bar.
Forums, Categorization, and Asset Publishing

Searching posts
You can easily find messages by searching. For instance, in order to search for posts that contain "book" in Message Boards, simply input that text as your search criterion. For example, enter "book" and then click on the Search button. A list of categories that contain the keywords as messages appears with the following columns: serial number, categories, messages (thread subject), thread posts, and thread views.

Search is scoped by category. For example, if you just need to search for messages, which contain the word "book" in the category Categories | Books | Liferay books, simply navigate to the category "Liferay books" first. Then, input the message keyword, for example, "book", and click on the Search button.

What are "messages" in a search? Messages here refer to the content of threads and posts. The content contains the subject and body of threads and posts.

Viewing my posts
You can view your own posts by clicking on the My Posts tab in Message Boards. A list of your posts will appear with the Thread, Started by, Posts, Views, Last Post, Status, and Actions menus with a set of options, such as Edit, Permissions, RSS, Subscribe/Unsubscribe, Lock Thread, and so on.

Viewing recent posts
Similarly, you can view recent posts by clicking on the Recent Posts tab of Message Boards. A list of recent posts will appear with thread, started by, posts, views, last post, and actions with the Thread, Started by, Posts, Views, Last Post, and Actions menus with a set of options, such as Edit, Permissions, RSS, Subscribe/Unsubscribe, Lock Thread, Move Thread, and Move to the Recycle Bin.

Viewing statistics
Furthermore, you can view general statistics by clicking on the Statistics tab of Message Boards. On doing so, statistical data, such as the number of categories, posts, and participants, will appear. In addition, click on the Top Posters subtab to display a list of the most active users.
Viewing banned users

You can view a list of banned users if you have proper permissions. To do this, simply click on the **Banned Users** tab in Message Boards. A list of banned users will appear with their name, ban date, unban date, and the **Un-ban this user** icon. In order to unban this user, you just click on the **Un-ban this user** icon next to the unban dates.

The following screenshot shows the major actions in the thread post view screen. These actions help you to perform actions on the particular threads:

![Figure 4.5: The Message Board thread screen](image)
Subscribing to categories and threads

As users of Message Boards, you may be interested in the changes to messages in specific categories and threads. For example, as the "Palm Tree" administrator, you may be interested in the messages in the "Liferay Books" category. You want to watch out for any changes of the messages in this category. You can certainly use the subscription function in the "Liferay Books" category. Let's do it by following these steps:

1. Locate the "Liferay Books" category.
2. Click on the **Subscribe** icon from the **Actions** menu next to the category. The **Subscribe** icon will become an **Unsubscribe** icon for this category.
3. Of course, you can subscribe to other categories. You may be interested in the message of the thread **Let's discuss the book Liferay**. Therefore, you can subscribe to it as follows:
   1. Locate the "Liferay books" category and the thread **Let's discuss the book Liferay**.
   2. Click on the **Subscribe** icon from **Actions** next to the thread. The **Subscribe** icon will become **Unsubscribe**.

Obviously, you can subscribe to other threads. In addition, you can view your subscriptions by clicking on the **My Subscriptions** tab. You will find lists of subscribed categories and threads; refer to the following screenshot:

![Figure 4.6: My Subscriptions](image)
Unsubscribing from categories and threads

In addition, you can unsubscribe from the categories, subcategories, or threads that you are currently subscribed to. For example, you may need to unsubscribe from the thread Let's discuss the book Liferay. Let's do it by following these steps:

1. Click on the My Subscriptions tab in Message Boards.
2. Locate the thread Let's discuss the book Liferay.
3. Click on the Unsubscribe icon from Actions located next to the thread.
   The thread Let's discuss the book Liferay will disappear from the My Subscriptions view.

You can also unsubscribe from the thread Let's discuss the book Liferay from the Categories view by following these steps:

1. Locate the "Liferay books" category and the thread Let's discuss the book Liferay.
2. Click on the Unsubscribe icon from the Actions menu next to the thread.
   The Unsubscribe icon will become Subscribe.

In brief, there are two options to subscribe to and unsubscribe from Message Boards:

• Subscribe/unsubscribe through categories or subcategories
• Subscribe/unsubscribe through threads

Thus, the Message Boards portlet supports e-mail both as a means of sending new posts to users and as a way for those users to answer to posts or create new threads.

What's happening?

If you have subscribed to categories or threads, and the messages of subscribed categories or threads have changed, then you will be notified of those changes.

Subscription is, generally speaking, an agreement to receive electronic text or services, especially over the Internet. Thread subscription provides a useful function, that is, to be notified by e-mail when a new message has been posted or updated. On the one hand, you can subscribe to a thread for a given category or subcategory. Whenever a message has been posted or updated, you will be notified by e-mail. On the other hand, you can unsubscribe from a thread of a given category or subcategory if it has been subscribed to already. On doing this, you wouldn't be notified by e-mail even if a message has been posted or updated.
Moreover, category subscription provides a useful function for notification by e-mail when a category has been updated. As with thread subscription, you can subscribe to a category or subcategory. Whenever a category or subcategory has been updated, you will be notified by e-mail. To learn how to set up mail notifications, refer to the next section.

**Customizing Message Boards**

As an administrator of the Palm Tree Publications enterprise, you can set up Message Boards. For example, you can configure subscription e-mails.

**Setting up**

To configure Message Boards to include the subscription function, click on the Gear (icon) | **Configuration** on Message Boards title bar. When the **Setup | Current** tab is selected, it shows a set of subtabs: **General, Email From, Message Added Email, Message Updated Email, Thread Priorities, User Ranks, and RSS**.

As shown in following screenshot, the **Allow Anonymous Posting, Enable Flags, and Enable Ratings** checkboxes are checked by default. This means that, by default, the portal allows anonymous posting and enabling of flags and ratings. The following screenshot illustrates the **Message Board** configuration:

![Message Boards - Configuration](image)

Figure 4.7: Configuration setup
What's happening? The portal sets the following property in portal.properties by default:

```
message.boards.anonymous.posting.enabled=true
```

The preceding code snippet sets the `message.boards.anonymous.posting.enabled` property to `true` in order to allow anonymous posting. Of course, you can override the value of the property in `portal-ext.properties` if you want. In addition, you would like to see the UI taglibs. You can find `<liferay-ui:ratings>` and `<liferay-ui:flags>` UI taglibs in `$PORTAL_ROOT_HOME/html/portlet/message_boards/view/view_thread_message.jspf`.

With the **Email From** tab selected, you can change the name and address of the e-mails being sent.

The **Message Added Email** tab allows us to edit the e-mail that is sent whenever a post is added. For disabling e-mail alerts, deselect the **Enabled** box first and then click on the **Save** button after making changes.

Similarly, the **Message Updated Email** tab allows us to edit the e-mail that is sent whenever a post is updated. As mentioned in the previous paragraph, you can disable e-mail alerts by deselecting the **Enabled** box first and then clicking on the **Save** button after making changes.

As you can see, there are default values for **Email From**, **Message Added Email**, and **Message Updated Email**. How? The portal sets the following properties in `portal.properties`:

```
message.boards.email.from.name=
message.boards.email.from.address=
message.boards.email.html.format=true
message.boards.email.message.added.enabled=true
message.boards.email.message.updated.enabled=true
```

The preceding code configures e-mail notification settings. Obviously, you could override these properties in `portal-ext.properties` if necessary.
With the **Thread Priorities** tab selected, you can manage the thread priorities profiles. By the way, as an administrator, you can change the name, image, and priority requirements by making changes directly and clicking on the **Save** button. The following table depicts default settings:

<table>
<thead>
<tr>
<th>Name</th>
<th>Image</th>
<th>Priority</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urgent</td>
<td>/message_boards/priority_urgent.png</td>
<td>3.0</td>
<td>Enter the name, image, and priority level in descending order. Threads with a higher priority are displayed before threads with a lower priority.</td>
</tr>
<tr>
<td>Sticky</td>
<td>/message_boards/priority_sticky.png</td>
<td>2.0</td>
<td>The name is the display name of the priority. The image is the display image of the priority and can be a complete URL or a path relative to the theme.</td>
</tr>
<tr>
<td>Announcement</td>
<td>/message_boards/priority_announcement.png</td>
<td>1.0</td>
<td>Note that you need to enter the name, image, and priority level in descending order. Threads with a higher priority are displayed before threads with a lower priority. The name is the display name of the priority, while the image is the display image of that priority and can be a complete URL or a path relative to the theme. More interestingly, localized languages are supported as well.</td>
</tr>
</tbody>
</table>

With the **User Ranks** tab selected, as an administrator, you can manage the ranking profiles. Of course, you can change the ranking names and posting number requirements by making changes directly and then clicking on the **Save** button. The following table shows the default settings:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Minimum posts</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Member</td>
<td>0</td>
<td>Enter the rank and minimum post pairs per line. Users will be displayed with a rank based on their number of posts.</td>
</tr>
<tr>
<td>Junior Member</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Regular Member</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Master</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>Expert</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>Legend</td>
<td>1000</td>
<td></td>
</tr>
</tbody>
</table>
Note that you can enter the rank and minimum post pairs per line, while users will be displayed with a rank based on the number of posts. You can definitely use a language other than English.

With the **RSS** tab selected, you can manage the RSS settings. Of course, as an administrator, you can change "Maximum Items to Display", "Display Style", and "Format". Having done that, click on the **Save** button. As you might have noticed, the RSS abstract is limited to 200 characters. Why? This is because the portal sets the following property in `portal.properties`:

```
message.boards.rss.abstract.length=200
```

The preceding code sets the `message.boards.rss.abstract.length` property's value to 200. You can override the value of the property in `portal-ext.properties`.

Note that it is also possible to activate SMTP events to allow users to respond to mails sent by Message Boards. In order to avoid HTML problems when posting through replies, the mails are now sent in plain text.

In addition, the portal allows messages to post pingbacks to blogs or any other pingback consumer. The portal has defined the following property to `true` in `portal.properties`:

```
messsage.boards.pingback.enabled=true
```

As you can see, the portal sets this property to `true` by default to enable pingbacks. Of course, you could disable pingbacks by setting the `false` property in `portal-ext.properties`.

**What's happening?**

As you can see, you would be able to configure the portlet Message Boards with Threads, Priorities, and User Ranks as portlet preferences. What's happening? The portal has specified the portlet preferences Threads, Priorities, and User Ranks after the line `<portlet-name>19</portlet-name>` in `$PORTAL_ROOT_HOME/WEB-INF/portlet-custom.xml`:

```xml
<portlet-preferences>
  <preference>
    <name>priorities</name>
    <value>Urgent,/message_boards/priority_urgent.png,3.0</value>
  </preference>
</portlet-preferences>
```
As shown in the preceding code, the portal specifies portlet preferences priorities and ranks. Of course, you can override the values of the portlet preferences for priorities and ranks if you need to.

**Banning and unbanning users**

As mentioned earlier, the portal provides the capability to ban and unban users. In the case of banning users, you may ask questions such as style?

The portal has the following default settings in portal.properties:

```properties
message.boards.expire.ban.job.interval=120
message.boards.expire.ban.interval=10
```

The preceding code sets the time in minutes for how often this job is run with the message.boards.expire.ban.job.interval property. For example, if a user's ban is set to expire at 12:05 PM and the job runs at 2 PM, then the expiration will occur during the 2 PM run. The code also sets the time in days to automatically expire bans on users. You can set the message.boards.expire.ban.interval property to 0 to disable autoexpiry in portal-ext.properties.

**Thread views**

As stated earlier, a thread can have different views—combination view, flat view, or tree view. The default view is the combination view. The thread view and default view are set through the following properties in portal.properties:

```properties
message.boards.thread.views=combination,flat,tree
message.boards.thread.views.default=combination
```

The preceding code sets thread views to allow and then sets the default thread view. Of course, you can override these properties in portal-ext.properties.
Using Message Boards as a mailing list

You may have noticed that you can activate mailing lists when creating a new category or subcategory. In this scenario, you are able to input a default e-mail address, an incoming mail configuration, and an outgoing mail configuration. Once a mailing list gets activated, users are allowed to subscribe to threads of that category or subcategory, and the portal will store a list of all users in the database that have subscribed. When a new post is added to Message Boards, the portal will query the database asynchronously in order to retrieve the users that have subscribed to the thread where the post is attached and also retrieve the hierarchy of categories to which it belongs. Moreover, it sends each of them an e-mail with the contents of the post.

Going deeper, the portal allows users to answer to these e-mails or even write their own new threads using e-mail. How to achieve it? As stated earlier, the portal assigns an e-mail address to each category/subcategory in Message Boards. Such an e-mail address is automatically added to the reply-to headers of the e-mail sent to subscribers so that a reply to e-mails received from Message Board will result in a new post in the appropriate category/subcategory and thread.

Message Boards in scope

One of the most powerful characteristics of Message Boards is the fact that when they are added to different groups, they act as completely independent portlets, each with its own data. By default, any portlet, such as Message Boards, is scoped into a group. That is, when portlets are added to a group, either public pages or private pages, they act as the same portlet.

For instance, when the Message Boards portlet is added to a page, for example, "Forums" of the Guest site, it will use the default scope. If you add the Message Boards portlet to a second page, say "Welcome", it will show the same data as that of the first page. When the Message Boards portlet is added to a page, it will immediately get scoped into the group to which the current page belongs.
As you can see, the Message Boards portlet was scoped into the Palm Tree group when it was added to a page of the Palm Tree site. You don't have flexibility of switching sites in this case. But this limitation can be solved through Control Panel. In Control Panel, you are able to switch the content of the Message Boards portlet to different sites. You can implement this by following these steps:

1. Click on Admin | Content.
2. Locate Message Boards under the Content category and click on Message Boards. You would see the same categories and threads as that of the page "Forums" because, by default, the content of the Message Boards portlet is scoped into the Palm Tree group.
3. Switch sites by selecting different sites from the sites drop-down menu.

A portlet such as Message Boards could get scoped into a page. How do we scope the Message Boards portlet into a page? To make the Message Boards portlet use a different data scope, follow these simple steps:

1. Locate a page such as "Forums" and the Message Boards portlet on the current page.
2. Click Gear (icon) | Configuration of the Message Boards portlet.
3. Click on the Scope tab.
4. Choose Current page (Forums) from the Scope selection menu and click on the Save button.

If you previously entered data in the default scope and then switched to the page scope, don't be afraid if you see all of your categories vanish. They will still remain in the site scope and can be retrieved using the Control Panel or by switching back to the default scope. Note that you shouldn't implement the steps we discussed in Control Panel; otherwise, you will scope the portlet message. However, scoping the content of the Message Boards portlet into the "Current Page (Control Panel)" page will be of no use.

Considering the Portal-Group-Page-Content pattern, the content of the Message Boards portlet could be scoped into a group, for example, by default content, such as all pages including both private pages and public pages. Moreover, it could be scoped into an individual page—this means that a set of data, for example, forum categories and threads, is isolated from other data of the same portlet.

The portal has default settings for the Message Boards portlet in $PORTAL_ROOT_HOME/WEB-INF/liferay-portlet.xml as follows:

```xml
<scopeable>true</scopeable>
```
The preceding code shows that the Message Boards portlet is scope-able, that is, you are able to use the Scope tab and change the scope from the default page to the current page.

In addition, you may be interested in the Edit Scope page. You can find more information about scope editing at $PORTAL_ROOT_HOME/html/portlet/portlet_configuration/edit_scope.jsp.

The friendly URL
When you view categories or subcategories, you will see a URL such as /web/guest/forums/-/message_boards/category/12024. Similarly, when you view messages (thread and posts), you would see a URL such as /web/guest/forums/-/message_boards/message/12024. This is a short and friendly URL. In fact, the portlet Message Boards supports friendly URL mapping as follows in $PORTAL_ROOT_HOME/WEB-INF/liferay-portlet.xml:

```xml
<friendly-url-mapper-class>com.liferay.portal.kernel.portlet.DefaultFriendlyURLMapper</friendly-url-mapper-class>
<friendly-url-mapping>message_boards</friendly-url-mapping>
```

The preceding code shows that the content inside a portlet needs a friendly URL via the friendly-url-mapper-class tag.

Archive, Export, and Import
As stated earlier, you have set up the portlets Message Boards, displaying general information, E-mail notification, user ranking, RSS, and so on. It would be nice if you could save these settings, and moreover, revert these changes later. This feature can be achieved through Archive Setup. You can set up archives using the following steps:

1. Locate the Message Boards portlet in a page.
2. Click on the Gear icon | Configuration | Setup | Archive / Restore Setup.
3. Input the archive name for the current setup, for example, "My MB", and click on the Save button.

After creating an archive, you will be able to see archives with the Name, User, Modified Date, and the icon Actions with the Restore and Delete subicons. Obviously, you can restore the setup via an archive or delete an archive.
Note that this feature is available for portlets for which the Setup tab is visible because the portal specifies this function in the portlet configuration file archived_setup_action.jsp and edit_archived_setups.jsp under $PORTAL_ROOT_HOME/html/portlet/portlet_configuration. More details and archives are stored in portlet preferences of the portal instance. Therefore, you shouldn't use this feature to back up data from one portal instance to another portal instance. Refer to the following screenshot for the Archive list:

![Message Boards - Configuration](image)

Figure 4.8: Archived setups

Fortunately, you can use the Export/Import feature for backup functions. The portal provides the capability to export and import portlet-specific data to a LAR file. You can export the portlet Message Boards-specific data to a LAR file:

1. Locate the Message Boards portlet in a page.
2. Click on Gear (icon) | Export / Import and select the Export tab.
3. Specify the LAR filename in order to export the selected data.
4. Set what you would like to export.
5. Click on the Export button.

Similarly, you can import LAR with the following steps:

1. Click on Gear (icon) | Export / Import and select the Import tab.
2. Choose the LAR file in order to import the data.
3. Set what you would like to import.
4. Click on the Import button when you are ready.
Why does a portlet such as **Message Boards** have export / import capability, whereas others portlets such as Hello World don't have such a capability? The reason is that the Message Boards portlet has the following setting that the Hello World portlet doesn't have:

```xml
<portlet-data-handler-class>com.liferay.portlet.messageboards.lar.MBPortletDataHandlerImpl</portlet-data-handler-class>
```

The preceding code shows that the content could be backed up as a LAR file via the `portlet-data-handler-class` tag.

What're the differences between archives and Export / Import?

Using the feature of Export / Import, you can export LAR from one portal server and import it into another portal server as long as the two portal servers are running the same version. On the other hand, when you use the Archive feature, only one portal instance is involved. The main difference is that archives back up setup configurations, whereas LAR contains data.

**Configuring portlets**

As you can see, there is a **Setup** tab under `Gear (icon) | Configuration` of the Message Boards portlet similar to that of the **Sign In** portlet. However, the Hello World portlet doesn't have this tab. A portlet will have the **Setup** tab under `Gear (icon) | Configuration` if the `configuration-action-class` tag is specified in `$PORTAL_ROOT_HOME/WEB-INF/liferay-portlet.xml`, as follows:

```xml
<configuration-action-class>com.liferay.portlet.messageboards.action.ConfigurationActionImpl</configuration-action-class>
```
The preceding code shows that the configuration-action-class tag allows users to configure the portlet at runtime. If the configuration-action-class tag isn't specified in the portlet configuration, then there will be no Setup tab under Gear (icon) | Configuration. As mentioned in Chapter 2, Setting Up a Home Page and Navigation Structure for the Intranet, all portlets have tabs Permissions and Sharing under Gear icon | Configuration. Therefore, you may ask: how many tabs are available for a specific portlet? The following are the possible tabs for portlet configuration (portlet ID 86):

- **Setup:** This is specified through the tag configuration-action-class. Refer to $PORTAL_ROOT_HOME/html/portlet/portlet_configuration/edit_configuration.jsp to see how it works.
- **Supported Clients:** This is specified by the tag supports and multiple subtags, such as mime-type in $PORTAL_ROOT_HOME/WEB-INF/portlet-custom.xml. Refer to $PORTAL_ROOT_HOME/html/portlet/portlet_configuration/edit_supported_clients.jsp to see how it works.
- **Permissions:** This tab is available for all portlets. Refer to $PORTAL_ROOT_HOME/html/portlet/portlet_configuration/edit_permissions.jsp to see how it works.
- **Communication:** This is specified via the supported-public-render-parameter tag in $PORTAL_ROOT_HOME/WEB-INF/portlet-custom.xml. Refer to $PORTAL_ROOT_HOME/html/portlet/portlet_configuration/edit_public_render_parameters.jsp to see how it works.
- **Sharing:** This tab is available for all portlets. Refer to $PORTAL_ROOT_HOME/html/portlet/portlet_configuration/edit_sharing.jsp to see how it works.
- **Scope:** This is specified by the tag scope-able in $PORTAL_ROOT_HOME/WEB-INF/portlet-custom.xml. Refer to $PORTAL_ROOT_HOME/html/portlet/portlet_configuration/edit_scope.jsp to see how it works.

As shown in the tabs discussed previously, all portlets have the Permissions and Sharing tabs by default. You can find detailed specification in $PORTAL_ROOT_HOME/html/portlet/portlet_configuration/tab1.jsp.
Assigning permissions

We have used the default settings for the Message Boards portlet in the "Forums" page of the page. When you're logged in as a "Palm Tree" administrator, you can manage Message Board. As you know, the user "Lotti Stein" is a member of Palm Tree. While trying to log in as "Lotti Stein", you would see Message Boards on the "Forums" page, but you will find out that there is no button called "Add Category" in Message Boards, which you can see in the following screenshot:

![Figure 4.9: The Message Board view for user having limited permission](image)

What's happening? This is something related to permissions. Permissions for Message Board can be assigned under Site Administration | Content | Message Board and another one is Site Administration | Application | Message Board. Moreover, each has a different set of permission levels:

- **Site Administration | Content | Message Board**: General Permissions, Resource Permissions (Messages, Message Boards category, Message Boards Thread, Message Boards Message)
- **Site Administration | Application | Message Board**: Application Permissions, Resource Permissions (Messages, Message Boards category, Message Boards Thread, Message Boards Message)

Let's discuss each of them one by one in detail.
Entitlements for the messages, which you can select for specific roles, is listed in the following screenshot:

![Permission for Message Boards](image)

Figure 4.10: Permission for Message Boards

The previous screenshot (Figure 4.10) shows permissions on Message Boards. **Portal Admin** has the ability to set up the permissions. By default, **Site Member** has limited permissions given. **MB Topic Admin** may have the ability to set up following permissions (marked as 'X'). By default, a **MB Topic Admin** and **Site Member** user has the view action permission (marked as '*'). The following table shows this:

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
<th>MB Topic Admin</th>
<th>Site Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Category</td>
<td>This permission provides the ability to add top-level category</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Add File</td>
<td>This permission provides the ability to add a file as attachment at the root category</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Add Message</td>
<td>This permission provides the ability to add a message</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Ban User</td>
<td>This permission provides the ability to ban or unban users</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
As you can see, as a site member, "Lotti Stein" doesn't have the **Add Category** and **Ban User** permissions on the Message Boards content by default. Of course, "Lotti Stein" could get these permissions by assigning permissions via roles. It is an example that shows how permission actions **Add Category** and **Ban User** are assigned.

1. Log in as an admin, say the "Palm Tree" portal.
2. First click on **Roles** under the **Users** category of **Control Panel**.
3. Then, locate a role, say "MB Topic Admin". If the role does not exist, create a new role with the name "**MB Topic Admin**".
4. Then click on the **Define Permissions** icon from **Actions** on the right-hand side of the role.
5. From the left-hand side tree menu, select **Site Administration** | **Content** | **Message Board: Resource Permissions** | **Messages** and check the **Add Category** and **Ban User** checkboxes.
6. Finally, click on the **Save** button when you are ready.

That's it! From now on, the user "Lotti Stein" has the **Add Category** and **Ban User** permissions on Message Boards content via the "MB Topic Admin" role.
Site Administration | Content | Message Boards Category

Entitlements for the Message Boards category, which you can select for specific roles, is listed in the following screenshot:

![Figure 4.11: Site content permission for Message Boards category](image)

As you can see, the previous screenshot (Figure 4.11) shows the permission on Message Boards. By default, site member has limited permissions given. MB Topic Admin may have the ability to set up following permissions (marked as 'X'). By default, MB Topic Admin and Site Member users have the view action permission (marked as '*'). This is shown in the following table:

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
<th>MB Topic Admin</th>
<th>Site Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add File</td>
<td>This permission provides the ability to add a file as attachment at the root category</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Add Message</td>
<td>This permission provides the ability to add a message</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Add Subcategory</td>
<td>This permission provides the ability to add subcategory</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
### Chapter 4

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
<th>MB Topic Admin</th>
<th>Site Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delete</td>
<td>This permission provides the ability to delete the message</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Lock Thread</td>
<td>This permission provides the ability to lock the thread</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Move Thread</td>
<td>This permission provides the ability to move thread at the root category</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Permission</td>
<td>This permission provides the ability to set up permissions</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Reply to Message</td>
<td>This permission provides the ability to reply to message at the root category</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Subscribe</td>
<td>This permission provides the ability to subscribe at the root category</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Update</td>
<td>This permission provides the ability to update the message</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Update Thread</td>
<td>This permission provides the ability to set up the thread priority</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Priority</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>View</td>
<td>This permission provides the ability to view the Message Board</td>
<td>X,*</td>
<td>*</td>
</tr>
</tbody>
</table>

Obviously, as a site member, "Lotti Stein" has only View, Add File, Add Message, Reply to Message, and Subscribe permissions for the subcategories Book Category A, Book Category B, and Book Category D. You can add this permission as we did earlier.

Note that you need to map Lotti Stein with the MB Topic Admin role. Once it's done, Lotti will have all the permissions defined. These permissions are defined for existing categories and newly created ones.

Now, let's discuss the individual site members who do not have the MB Topic Admin role and only have the Site Member role with the default settings. The Book Category D has only View permissions because, while creating the category, we defined only View permissions for the Site Member role.
As an administrator, you may need to set up users of the Site Member role with the default permissions setting (View, Add File, Add Message, Reply to Messages, and Subscribe) for the Book Category D category. Thus, you need to add the permission actions Add File, Add Message, Reply to Messages, and Subscribe to the category Book Category D via the Site Member role. Let's do it by following these steps:

1. Click on the parent category Books in order to list its subcategories.
2. Locate the subcategory Book Category D where you want to change permissions.
3. Then, click on the Permissions icon from Actions next to the category.
4. Select the Add File, Add Message, Reply to Message, and Subscribe permissions to the Site Member role.
5. Click on the Submit button.

From now on, all the site members will have the following permissions: View, Add File, Add Message, Reply to Messages, and Subscribe on the subcategory Book Category D.

The preceding steps provide a way to update permissions for an individual resource, for example, Book Category D. How about permissions on categories—existing ones or newly created ones? Let's consider a use case: the user "Lotti Stein" should have the permission Update on categories, including subcategories—both existing ones and newly created ones. How to implement this use case? By assigning permissions via roles in Control Panel as an example, we give the answer in the following steps:

1. Log in as an admin, say Palm Tree.
2. First, click on Roles under the Users section of Control Panel.
3. Then locate a role, say MB Topic Admin.
4. Then click on the Define Permissions icon from Actions on the right-hand side of the role.
5. From the left-hand side tree menu, select Site Administration | Content | Message Board: Resource Permissions | Message Boards Category and check the Update checkboxes.
6. Finally, click on the Save button.

As shown in the preceding steps, the user is assigned the Update permission on the Message Boards category across all sites in which Lotti Stein is a member. The user "Lotti Stein" is mapped to the "MB Topic Admin" role. Therefore, the user "Lotti Stein" got the Update permission on the Message Boards category across all sites in the current portal instance.
Site Administration | Content | Message Boards

Messages

Entitlements for Message Boards Messages is listed in the following screenshot, which you can select for specific roles:

![Figure 4.12: Site content permission for Message Boards message](image)

The previous screenshot (Figure 4.12) shows permissions on Message Boards. MB Topic Admin may have the ability to set up the following permissions (marked as 'X' by default, MB Topic Admin and Site Member users have the view action permission (marked as '*')):

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
<th>MB Topic Admin</th>
<th>Site Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delete</td>
<td>This permission provides the ability to delete messages</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Permissions</td>
<td>This permission provides the ability to assign permissions</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Subscribe</td>
<td>This permission provides the ability to subscribe to the thread</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Update</td>
<td>This permission provides the ability to update messages</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>View</td>
<td>This permission provides the ability to view the details of messages</td>
<td>X, *</td>
<td>*</td>
</tr>
</tbody>
</table>

Note that the Owner role is able to set up all permissions and, by default, has all permission actions. Of course, as a portal administrator, you can create a new role and assign any permission based on the role to different users.
Site Administration | Content | Message Boards

Thread

Entitlements for the Message Boards thread, which you can select for specific roles, is listed in the following screenshot:

![Figure 4.13: Site content permission for Message Boards thread](image)

Message Boards Thread permission settings allow the users to set the permissions in the thread level. It even allows subscribing the thread to the users. This is shown in the following table:

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
<th>MB Topic Admin</th>
<th>Site Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permissions</td>
<td>This permission provides the ability to assign permissions</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Subscribe</td>
<td>This permission provides the ability to subscribe to the thread</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>View</td>
<td>This permission provides the ability to view the details of messages</td>
<td>X, *</td>
<td>*</td>
</tr>
</tbody>
</table>

Site Administration | Content | Message Boards

General Permissions

Entitlements for Message Boards to general permissions, which you can select for specific roles, is listed in the following screenshot:

![Figure 4.14: Site application permission for Message Boards](image)
<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
<th>MB Topic Admin</th>
<th>Site Member</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Access in Site Administration</strong></td>
<td>This permission provides the ability to access the portlet Message Boards in site administration</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Configuration</strong></td>
<td>This permission provides the ability to configure portlet</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Permissions</strong></td>
<td>This permission provides the ability to set up the permissions</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>View</strong></td>
<td>This permission provides the ability to view the content of the portlet</td>
<td>X,*</td>
<td>X,*</td>
</tr>
</tbody>
</table>

Obviously, as a site member, "Lotti Stein" only has the **View** permission on the Message Boards portlet by default. As the **Site Member** role doesn't have the **Configuration** and **Access in Site Administration** permissions, "Lotti Stein" wouldn't have the **Configuration** and **Access in Site Administration** permissions too. That is, "Lotti Stein" doesn't have the ability to configure the portlet Message Boards in the "Forums" page or to access the Message Boards portlet in **Site Administration**.

What's the permission action **Access in the Site Administration**? This permission action represents the ability to access the Message Boards portlet in Site Administration. By default, the user "Lotti Stein" doesn't have the ability to access the Message Boards portlet in Site Administration. But the requirement is that the user "Lotti Stein" should have the ability to access the Message Boards portlet in Site Administration.

Simply check the box beside **Access in the Site Administration** and save it. All users who have MB Topic Admin will have the ability to access the Message Boards portlet in site administration.
Site Administration | Application | Message Board | Application Permissions

Entitlements for the application permissions, which you can select for specific roles, are listed in the following screenshot:

![Application Permissions](image)

Site Application permissions affect the application with respect to the portal. So, let's see with the Message Boards example that application permission allows us to define who can add the Message Boards portlet to a page. This is shown in the following table:

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
<th>MB Topic Admin</th>
<th>Site Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add to Page</td>
<td>This permission provides the ability to add the portlet Message Boards portlet in page</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Configuration</td>
<td>This permission provides the ability to configure portlet</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Permissions</td>
<td>This permission provides the ability to set up permissions</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>View</td>
<td>This permission provides the ability to view the content of the portlet</td>
<td>X, *</td>
<td>*</td>
</tr>
</tbody>
</table>
As you can see, as a site member, "Lotti Stein" only has the permission actions **View** and **Subscribe** on messages (threads and posts). That's because we have added them through the Site Member role as the default settings. Now, suppose that we're going to add the **Update** permission on message (both thread and post) in following scopes:

- Individual thread or post
- A set of threads and posts belonging to a category such as Book Category D
- All threads and posts in a site
- All threads and posts in a portal instance, such as the current portal instance

How do we implement the preceding use cases? For individual threads or posts, you can assign permissions in the Message Boards portlet through custom regular roles or a custom site role (or Site Member) for site pages or a custom organization role (or Organization Member) for organization pages.

For all threads and posts in a site scope, you can assign permissions in the configuration through a custom site role (or Site Member) for site pages or a custom organization role (or Organization Member) for organization pages.

For all threads and posts in a portal instance, you can assign permissions in **Control Panel** through custom regular roles. For a set of threads and posts belonging to a category, you can use a category hierarchy structure.

In practice, when you assign any permission on a message to a role, make sure that you assign the related permissions, at least **View**, on both the Message Boards portlet and the message's subcategories and category. Otherwise, you wouldn't be able to view the portlet and the related categories. Moreover, the message would be invisible to people with the role.

**Using Message Boards effectively**

The following figure depicts a forum structure overview of Message Boards. A forum is made up of a set of categories. Each category can have many subcategories and threads. Furthermore, each thread may have many posts (in the form of replies). The thread refers to the collection of messages.
A thread itself is a post too. The posts may be displayed in a flat chronological order by the date of posting or in a question-answer order. The figure shows a thread of one question followed by all the answers in a hierarchy. Actually, threads can be regarded as the root level posts. Subposts are also supported, which enable comments in one of the replies to start another thread that remains linked to the original. Moreover, you can enable flags, thereby allowing users to flag content as inappropriate. In addition, you can subscribe to categories/subcategories and threads. Refer to the following screenshot for more details on relationships:

![Diagram of message board design](image)

Figure 4.16: Message Board design

As shown in the preceding figure, you are able to attach a set of files to posts (and threads because a thread itself is a post). In addition, you are able to select existing tags or add new tags to posts.

**The category hierarchy**

As you can see, there are top-level categories with the **Add Category** permission action. A top-level category forms a root, that is, a message container. Each category can have many subcategories with the **Add Subcategory** permission action. Therefore, categories and subcategories form a hierarchical structure—categories form the root, while subcategories form the trunk and leaves.

How can you benefit from the category hierarchy? The main benefit you can get is inherited permissions. Another benefit you can get is content sharing within a category hierarchy. As mentioned earlier, when you assign any permission on a message to a role, you must make sure that you assign related permissions—at least **View**—on the message’s subcategories and categories. Therefore, we can use the category hierarchy to assign permissions for a set of threads and posts belonging to a category or a subcategory.
Semantics and ontology
When a message has been created, the portal will check for spelling. Thus, the message does have a specific syntax, but it doesn't involve semantics. Semantics is the study of the meanings of linguistic expressions (as opposed to their sound, spelling, and so on.). Moreover, it would be useful if messages could be managed through semantics.

As previously mentioned, you can tag messages through folksonomy. Later, you would be able to apply taxonomy on messages. Folksonomy is a user-generated taxonomy that is used to categorize and retrieve web content using open-ended labels called tags. On the other hand, taxonomy is the practice and science of classification—hierarchical in structure and commonly displaying parent-child relationships.

This is a good way to approach a semantic classification of content, such as messages. Moreover, it would be possible to build a complete ontology based on the concepts of folksonomy and taxonomy. In this way, content can be classified as instances, and properties of content can be used to navigate through concepts declared in the ontology.

Categorization and tags
Sooner or later, you will have a lot of posts on Message Boards. Therefore, it is useful to allow users to generate content post and classify that content post in their own unique way. Let's first experience tagging assets.

Tagging assets
As an administrator at the enterprise Palm Tree Publications, you may need to add the tags "Liferay" and "book" in the post "RE: Let's discuss book Liferay". Let's do it by following these steps:

1. In a post-updating page, locate the Tag box.
2. In the Tag text box, simply start typing the tag name and a list of tags will appear. For example, when "li" is typed into the textbox, a list of available tags is populated. Select the tag you want, say "liferay", and that tag should show up at the top of the box.
3. Similarly, when book is typed into the textbox, a list of available tags is populated. Select the tag you want, say "book", and the tag should show up at the top of the box too.
4. Click on the Save button when you are ready.
5. For some reason, let's say you need to remove a tag "Book" from the tag list. To remove the "Book" tag, simply click on the mark "[x]" located next to the tag first and then click on the **Save** button when you are ready.

6. Similarly, you can tag content including Bookmark entries, Blog entries, Document and Media portlets, Wiki articles, Web Content articles, Message Board messages, and so on.

Tags and Categorization can be defined for any assets using the Tags field, which is shown in the following screenshot:

![Categorization and tags](image)

**Figure 4.17: Categorization and tags**

### Folksonomies

As you can see, there is an open set of tags called *Folksonomies* that can be extended by end users. In general, as a user, you are able to carry out the following tasks based on the tags:

- Extend tags by entering a tag and press **Enter**
- Select tags by clicking on the **Selected Tags** button, where it displays a set of existing tags for you to select multiple tags
- Find tags by clicking on the **Suggestions** button, where it uses advanced search techniques to find out tags

In short, the portal provides the meta tag *Folksonomies*, which is a tagging system that allows us to tag web content, documents, Message Board messages, and more. It also dynamically publishes content by tags. The meta tags can later be used to classify assets and search and aggregate them.
Chapter 4

Taxonomies
Besides the meta tag Folksonomies, you could use another kind of tag called Taxonomies. In general, taxonomies are a way of organizing and aggregating content—a closed set of categories (tags by a different name) of the vocabulary, which are created and organized in a hierarchical structure.

Categories are displayed in a hierarchical structure. You are able to choose as many categories as you expected. You could search and find your favorite categories in a quick way when the number of categories is huge. Let’s see how to build a category hierarchy in the next section.

Tags administration
The following is a summary of tags and their related portlets in the portal:

- **Administration**:
  - Tags: This manages folksonomies—tags
  - Categories: This manages taxonomies—vocabulary, categories, and their properties

- **Tag different types of assets in the portal**: These include Bookmark entries, Blog entries, Wiki articles, Document and Media portlets, Web Content articles, and Message Board messages

- **Aggregate assets in the portal**: This is Asset Publisher

- **Display tags**:
  - Tag Cloud—This is a visual depiction of user-generated tags
  - Tags Navigation—This is used to display user-generated tags in multiple styles
  - Categories Navigation—This is used to display predefined tags in a hierarchical structure
The Tags portlet
To manage tags, you should go to Tags under the Content category of Site Administration. Using the Tags portlet (portlet ID 99), you can add tags. As shown in the following screenshot, the Tags portlet provides the capabilities to manage tags with the Actions and Add Tag options and Search.

Tags enable categorization of content through flexible groups of terms and preset vocabularies. Administrators can manage all tags, assign permissions, and set advanced options. Users can manage their tags and define tag sets and categories to use when categorizing content.

To search for tags, you can simply input a search criterion, say "chapter" first and then click on the Search button. The search results will appear dynamically.

To add a tag, simply click on the Add Tag button and the pop-up dialog window will appear, and input the tag name, say "Chapter". Then click on the Save button to save inputs or the Cancel button in order to discard inputs. If the tag doesn't exist in the current group, the tag will be added by associating it with the current group, and it will bring us to the Tag view. Otherwise, it will display a message stating "That tag already exists".

Suppose that you want to change the "chapter" tag to "Chapter details", how would you do this? The process is simple; just click on the tag "chapter" using the edit button in the tag details section. In the Edit Tag view, the tag name is displayed. In the tag name "chapter", you can type "Chapter details" and click on the Save button. Optionally, you can click on the Close button or the close icon to cancel the current process.

Don't forget that you can merge tags. For example, after you can select multiple tags, say "book" and "liferay", in the top menu, the Actions drop-down link will be visible. Now, click on the Merge link. The Merge Tags window will pop up. Select the tags and click on Ok, and then you would see a pop-up message that says: Are you sure you want to merge the chosen tags into "book"? This will change all items tagged with "book" to be tagged with "liferay".
Creating Tags for a specific site scope is done through the Site Administrator panel; refer to the following screenshot:

![Figure 4.18: The Tags portlet—adding a new tag](image)

**The Categories portlet**

Categories describe a set of vocabulary terms to tag content items. Administrators can create vocabularies and populate them with categories that users can choose from when authoring content.

In order to manage vocabularies and categories, you can go to Categories under the Content category of Site Administration. Using the Categories portlet (portlet ID 147), you can add vocabularies and categories and also manage categories' properties. As shown in the following screenshot, the Categories portlet provides capabilities to manage tags, including Search, Add Vocabulary, Add Category, Permissions, and Actions.

As you may have noticed, the Topic vocabulary was created by default, and it was shown under the Vocabularies column. Of course, you can search vocabularies and categories in a convenient way. In order to do so, you can simply input a search criterion, say "book", first, then select types—either Categories or Vocabularies—and then click on the Search button. The search results will appear dynamically.
To add a vocabulary, simply click on the Add Vocabulary button, input the vocabulary name, for example, "Book", and change the default permission settings first. Then, click on the Save button to save inputs or the Cancel button to discard inputs. If the vocabulary doesn't exist in the current group, then the vocabulary will be added associated with the current group. Otherwise, it will show That vocabulary already exists. Thus, vocabulary names must be unique in the current group.

Suppose that you want to change the vocabulary from "Book" to "Books". In order to implement it, click on the "Book" vocabulary using the edit link. In the Edit view, the vocabulary name will be editable. Where the vocabulary name is "Book", you can type "Books" and click on the Save button. Again, the updated vocabulary name must be unique in the current group.

If needed, you can delete a vocabulary. You can first locate a vocabulary, say "Book" and click on the Delete button under Actions. As you can see, a vocabulary could have many categories associated with it. Therefore, when a vocabulary gets deleted, the categories that belong to the current vocabulary will get removed too.

After adding vocabularies, you are ready to add categories, as shown in the following screenshot:

Figure 4.19: Categories portlet
In order to add a category, simply locate a vocabulary, for example "Book", click on the Add Category button, input a tag name, say "Chapter", and change the default permission settings. Optionally, you are able to select different vocabularies from the drop-down list. Then, click on the Save button to save inputs or the Cancel button to discard inputs. If a category doesn't exist in the current vocabulary, then the category will be added to the current vocabulary, and it will bring us to the Edit Category view. Otherwise, it will throw an error message That category already exists.

In cases where you want to change the category "Chapter" to "Main Chapter", click on the category using the edit links, say "Chapter". In the Edit Category view, the category name and properties are displayed. In the category name "Chapter", you can type "Main Chapter", and click on the Save button. Optionally, you can press the Close button or close icon to cancel the current process. Again, the updated category name must be unique in the current vocabulary.

A category can have another category as its parent category. That is, categories support a hierarchical structure. In order to build the hierarchy, you can add categories, such as "Chapter" and "Section" first, and then you can drag and drop a category called "Section" to a correct parent category, say "Chapter". That's it!

To delete a property of a given category called "Chapter", locate the property first. After locating it, click on the delete icon next to the property. In order to add one more property of a given category, say "Chapter", just click on the add icon first. Then, simply input the name and value. Finally, click on the Save button to save the changes or the Cancel button to cancel the changes.

As you can see, a category can have many properties associated with it. Note that when a category gets deleted, the properties that belong to the current category will get removed too.

As stated earlier, a vocabulary may have many categories associated with it, where each category may have other categories as its child categories, and where each category may, in turn, have many properties.
Configuring tags
As you have noticed, when you click on Categories under the Content category of Site Administration, the Topic vocabulary is created by default. However, when you add categories, there is no default property for a newly created category. Moreover, when you click on Tags under the Content category of Site Administration and add tags, you will see that there is no default tag property for newly created tags. The portal has the following settings by default in portal.properties:

```
asset.categories.properties.default=
asset.tag.properties.default=
asset.vocabulary.default=Topic
```

As shown in the preceding code, you can input a list of comma-delimited default properties for newly created categories via the `asset.categories.properties.default` property. Note that each item of the list should have the `key: value` format. You can also input a list of comma-delimited default tag properties for newly created tags via the `asset.tag.properties.default` property. Again, each item on the list should have the `key: value` format. Moreover, you can set a name, other than Topic, to the default vocabulary. Of course, you can override these properties in portal-ext.properties if required.

In addition, the portal has the following settings by default in portal.properties:

```
asset.categories.search.hierarchical=true
```

The preceding code shows that the `asset.categories.search.hierarchical` property is set to `true`; thus, the child categories are also included in the search. Of course, you can set it to `false` in order to specify that searching and browsing using categories should only show assets that have been assigned the selected category explicitly.

Publishing tags
There are several portlets available to publish tags. These portlets include Tag Cloud (portlet ID 148), Tags Navigation (portlet ID 141), and Categories Navigation (portlet ID 122). How do we get these portlets in one place? As an example, you can simply create a page called "Tags" in the Guest public pages and add these three portlets using Add Application under dock bar menu.
The Tag Cloud portlet provides a visual depiction of user-generated tags, shown with varying font size. Note that there is the Communication tab under Gear (icon) | Configuration and that the shared parameter tag can be mapped to categoryId because the portlet has the following configuration in $PORTAL_ROOT_HOME/WEB-INF/portlet-custom.xml:

```xml
<supported-public-render-parameter>tag</supported-public-render-parameter>
```

Set up communication among the portlets that use public render parameters. For each of the public parameters in this portlet, it is possible to ignore the values coming from other portlets or to read the value from another parameter.

The Tags Navigation portlet gives us the capability to navigate user-generated tags in different ways. Just as with the Tag Cloud portlet, there is a Communication tab under Gear (icon) | Configuration, and the shared parameter tag can be mapped into categoryId using it. Additionally, the portlet has the Setup tab under Gear (icon) | Configuration. Therefore, you can configure views of user-generated tags via the Setup tab. Using Setup, you will be able to show the asset count, select the asset type (for example, Any, Blogs Entry, Bookmarks Entry, Document and Media Document, Web Content, Message Boards Message, Wiki Page, and so on), select the display type (for example, Number, Cloud), and show tags with no assets.

What happens when we map Tag to CategoryId or vice versa? Tag and CategoryId are defined as Public Render Parameters. With the Public Render Parameters feature, the render parameters set in the processAction method of one portlet will be available in the render parameter of other portlets as well. Using public render parameters instead of Events avoids the additional process event call. In the portlet section, each portlet can specify the public render parameters it would like to share via the supported-public-render-parameter element.

The Categories Navigation portlet provides the capability to navigate categories in a hierarchical structure. Just as with the Tag Cloud portlet, but in reverse order, there is a Communication tab under More... | Configuration. The shared parameter categoryId can be mapped to a tag because the portlet has the following configuration in $PORTAL_ROOT_HOME/WEB-INF/portlet-custom.xml:

```xml
<supported-public-render-parameter>categoryId</supported-public-render-parameter>
```
Asset Publisher
As stated earlier, we discussed how to build assets, for example, Message Board messages. We have also introduced you to adding tags and categories on assets such as Message Board messages. Now it is time to investigate how to publish assets with tags and categories. Asset Publisher is a flexible tool to publish many types of assets within the portal. It allows the showing of lists of web content, blog entries, images, documents, bookmarks, wiki pages, and so on. Each element on the list can be displayed as a title, a summary (abstract), in full detail, and much more.

Main features
Let's say that you have a page named "Asset Publishing" in the Guest public pages, and you are going to publish any assets including a Message Boards message in this page. How will you publish any assets on a page? Obviously, the Asset Publisher portlet is the key! First, you can create a page named "Asset Publishing" under the Guest public pages via Add | Page of the dock bar menu. Then, you can add Asset Publisher via Add | Asset Publisher.

After adding Asset Publisher, you would see that assets, especially Message Boards messages in this example, get published as shown in following screenshot:

![Figure 4.20: The Asset Publisher portlet](image)

What are the main features of the Asset Publisher portlet? The following are the main features. However, the Asset Publisher has many other features too:

- It includes the ability to add new assets, including Web Content, Documents and Media Document, Blog Entry, and Bookmark Entry, all in one place.
The features include the capability to publish many types of assets within
the portal.
Other features include the ability to edit different types of assets in one place.
It can also show lists of web content, blog entries, images, documents,
bookmarks, wiki pages, and Message Boards messages as a title, a summary,
or even in full detail through publishing rules. Note that this summary
doesn't support multiple languages.
It can support pagination in different styles.
It allows users to click an asset in order to see it in full detail.
It supports both manual and dynamic selection of asset types.

In short, the Asset Publisher portlet allows users to publish any type of asset in the
portal as if it was web content, either filtering through a set of publishing rules or by
manual selection.

The Asset Publisher portlet provides a way to display tagged assets—Bookmark
entries, Blog entries, Document and Media documents, Wiki articles, Web Content
articles, and Message Board messages. Given a set of tags or categories, assets "tagged"
with specific tags or categories will be displayed in the Asset Publisher portlet.

In addition, you can easily add assets (Bookmark entries, Blog entries, Document and
Media documents, and Web Content articles) within the portlet.

For Bookmark entries, Blog entries, Document and Media documents,
Wiki articles, and Web Content articles, refer to the instructions given
in the coming chapters.

Configuration
Generally speaking, the Asset Publisher portlet is highly configurable. You can select
assets manually or dynamically. Using the Gear (icon) | Configuration | Setup
navigation, you will be able to set up publishing rules—Asset Selection Manual and
Asset Selection Dynamic. By the way, you are able to save the current setup in the
archives by navigating to the Gear (icon) | Configuration | Setup | Archive/Restore
Setup link. This process is the same as that of the Message Boards archives setup.
Selecting assets manually

Once you've chosen the Manual option under Asset Selection, as shown in the following screenshot, you will be able to select assets manually. In general, there are three sections for manual asset publishing: the Asset Selection tab, the Display Settings tab, and the Show metadata section under the Display Settings tab.

- **Asset Selection**: You are able to choose what will be published in Asset Publisher
- **Display Settings**: You are able to set up how to display assets in Asset Publisher
- **Show metadata**: You are able to select the metadata field to display under each published content in Asset Publisher

![Figure 4.21: The Asset Publisher configuration](image)

Figure 4.21: The Asset Publisher configuration
In **Asset Selection**, you will be able to select **Scope** and **Asset Entries**. **Scope** allows you to define the scope for Asset Publisher as to which site scope the asset will be picked up for display. By default, it's **Current Site**, but you can add multiple scopes to Asset Publisher, such as **Global**, **Sites**, and **Pages**. Selecting **Asset Entries** allows you to select the assets that you have already created in the scope, such as Tasks Entry, Document Folder, Bookmarks Folder, Microblogs Entry, Blogs Entry, Message Boards Message, Web Content Article, Calender Event, Bookmark Entry, Wiki Pages, and Document and Web Content Folder. You can select multiple **Assets Entries** one by one by clicking on the **Select** button.

Once you’ve selected multiple assets, you are able to view the selected assets with the **Type** and **Title** columns plus the **Move Up / Move Down** and **Delete** icons. If needed, you can change the order of assets by clicking on **Move Up / Move Down** next to the asset or remove an asset from the list by clicking on the **Delete** icon next to the asset.

The configuration has been differentiated by **Asset Selection**, **Display Settings**, and **Subscription**, which are in the form of tabs. See the previous screenshot.

- **Asset Selection**: The selection of assets needs to be done here, for example, with Message Board as the asset type or by filtering the Asset categories or tags
- **Display Setting**: All the display settings will be done here
- **Subscription**: Setting for subscription

As shown in the next screenshot, **Display Settings** specifies the style in which selected assets will be displayed. For assets in Asset Publisher, you can specify the following styles:

- **Display Style**: This has **Table**, **Title List**, **Abstracts**, and **Full Content** as options.
- **Abstract Length**: This specifies the number of characters to display for abstracts; the default is 200 and the maximum number is 500.
- **Asset Link Behavior**: This can either be set to **Show Full Content** or **View in a specific portlet** and gives you options to decide what happens when a user clicks on an asset—showing the content right where you are or by taking you to the page where the content was originally published.
- **Number Items to Display**: This is a number used for dynamic selection only.
- **Pagination Type**: The types are **None**, **Simple**, or **Regular**. This is used for dynamic selection only.
• **Show metadata Descriptions**: This is a checkbox for content related to tags.

• **Show Available Locales**: This enables the display of available locales.

• **Set as the Default Asset Publisher for This Page**: The default asset publisher will be used to display web content associated with this page.

• **Enable Conversion To**: Enabling OpenOffice integration provides the document conversion functionality. The possible formats involved are DOC, ODT, PDF, RTF, SXW, and TXT, but this list is not limited.

• **Enable Print**: This checkbox enables print capability on assets.

• **Enable Flag**: This checkbox enables flag capability on the assets.

• **Enable permissions**: This checkbox enables permission capability on the assets.

• **Enable Related Asset**: This checkbox enables related assets to be mapped.

• **Enable Ratings**: This checkbox enables the ratings capability on assets.

• **Enable Comments**: This checkbox enables the comments capability on assets.

• **Enable Comments Ratings**: This checkbox enables ratings capabilities on comments of assets.

• **Enable social Bookmarks**: This checkbox enables the following social bookmarks features:
  
  ◦ **Display style**: This allows you to define the position of the social bookmarks on the assets page, for example, **Simple**, **Horizontal**, and **Vertical**.
  
  ◦ **Display position**: This allows you to position the social bookmarks on the assets page, for example, **Top** or **Bottom**.

• **Show Metadata**: This shows the metadata of assets, and the available metadata includes **Author**, **Categories**, **Create Date**, **Expiration Date**, **Modified Date**, **Priority**, **Publish Date**, **Tags**, and **View Count**. You can also add metadata by clicking on the **Add** icon from **Available** to **Current**, remove metadata by clicking on the **Remove** icon from **Current** to **Available**, or change the order of metadata in **Current** by clicking on the **Move Up** or **Move Down** icons for selected metadata in **Current**.
Figure 4.22: Display settings of Asset Publisher
Selecting assets dynamically

Once you've chosen Asset Selection Dynamic, you are able to select assets dynamically. In general, there are four sections of dynamic asset publishing: Source, Filter, Custom User Attribute, Ordering and Grouping, Display Settings and RSS.

In the Source section, there are two options, one to select Scope and another to select Asset Type.

The default scope is the current group. As Asset Publisher was added to the "Asset Publisher" page of the Guest public pages, the default scope is the group Guest. If Asset Publisher was added to the "Asset Publishing" page of the "Palm Tree Enterprise" organization's public pages, the default scope would've been the group organization "Palm Tree Enterprise".

Besides the default scope, there is another group called Shared Global available in the portal. Therefore, you will have three options for scope: default scope only, Shared Global only, or both default scope and Shared Global. Using any of these options, you will be able to add a scope by clicking on the Add icon from Available to Current, or remove a scope by clicking on the Remove icon from Current to Available. Moreover, you can change the order of scopes in Current by clicking on the Move Up or Move Down icon for a selected scope in Current.

The default asset type would be "any". Thus, the assets that you would be able to include are Wiki Pages, Calendar Event, Bookmark Entry, Message Board Messages, Web Content, Documents and Media Document, and Blog Entry. Of course, you can choose more than one asset type. You will be able to add an asset type by clicking on Add icon from Available to Current, remove an asset type by clicking on the Remove icon from Current to Available, or even change the order of asset types in Current by clicking on the Move Up or Move Down icon for a selected asset type in Current.

In the Filter section, there are two options, that is, selecting display rules and checkboxes with Show only assets with Asset Publishing as its display page, Include Tags specified in the URL, and Include tags set by other applications?. The displayed assets must follow these rules. The display rule has an expression: find assets which "contain / don't contain" "any/all" "tags/categories". Moreover, you can have as many of these expressions as you want.

By default, "tags" was selected and not "categories". In order to input tags that will be displayed, the content must "contain / not contain" "any/all"; simply start typing the tag and a list of tags will appear. Pick up a tag where the displayed content must contain / not contain, and click on the Add Tags button. The selected tags will appear at the top of the input box. Optionally, simply click on the Select Tags button, and then pick up one or more tags. To remove a tag, click on the [x] mark located next to the tag.
To use categories instead of tags, select "categories" first, and then click on the Select Categories button. Pick up one or more categories. To remove a category, click on the [x] mark located next to the category.

The Show only assets with Asset Publishing as its display page checkbox shows only assets related to Asset Publisher in the display.

The Include tags specified in the URL checkbox shows whether the portal includes tags specified in the URL or not. By default, this checkbox is selected, which means that the portal will include tags specified in the URL. Of course, you can deselect this checkbox to disable this functionality if you want.

The Include tags set by other applications checkbox allows certain applications, such as Blogs or Wiki, share the tags of their entries within the page. Asset Publisher can use them to show other assets with the same tags.

In the Ordering and Grouping section, there are three options, namely Order by, And Then By, and Group by. The metadata for Order by and And Then By would be Title, Create Date, Modified Date, Published Date, Expiration Date, Priority, View Count and Ratings—the order can be ascending or descending.

The metadata of Group by would be Asset Type or Vocabulary. That is, you would be able to group assets by asset type (Web Content, Documents and Media Document, Blogs, Wiki, Message Boards, and Bookmarks) or vocabulary (for example, "Book", and "Topic").

In the Display Settings section, you can specify the style in which selected assets will be displayed. The processes would be the same as, or similar to, those of the Asset Selection Manual.

In the RSS section, you will find the checkbox, Enable RSS Subscription. Once you select the checkbox, It allows you to perform setting for RSS, such as "RSS feed Name", "Maximum item to display", "Display style", and Format.

Finally, you can click on the Save button to save the changes if you are ready or click the Cancel button to cancel the changes.

**Customization**

As you can see, there are four display styles—Tables, Title List, Abstracts, and Full Content. The portal has the following setting by default in portal.properties:

```plaintext
asset.publisher.display.styles=table,title-list,abstracts,full-content
```
As shown in the preceding code, you can input a list of comma-separated display styles that will be available in the configuration screen of the Asset Publisher portlet. Of course, you can override this property in portal-ext.properties.

In addition, there is one more property related to the tag, which is, "Include tags specified in the URL" as follows:

```
tag.compiler.enabled=true```

The preceding code sets the tags.compiler.enabled property to true in order to provide the ability to compile tags from the URL. This is the reason that the Include tags specified in the URL checkbox was selected by default. Note that disabling this feature can speed up performance.

**What's happening?**

As you can see, Asset Publisher can publish any of the assets from the portal's core part, such as Wiki Pages, Calendar Event, Bookmark Entry, Message Board Messages, Web Content, Documents and Media Document, and Blog Entry. In addition, Asset Publisher can publish any assets from plugins, such as the Knowledge Base portlet.

What's happening? The portal provides a framework called Asset Renderer Framework with the tag `asset-renderer-factory` at `$PORTAL_ROOT_HOME/dtd/liferay-portlet-app_6_1_0.dtd`. This framework allows us to register custom asset types so that generic portlets, such as Asset Publisher, can be used to publish them. Note that the `asset-renderer-factory` value in the custom asset types must be a class that implements `com.liferay.portlet.asset.model.AssetRendererFactory` and is called by Asset Publisher.

**A configurable look and feel**

Now, you can implement the views through templates. CSS and JavaScript should be available as templates as well. It would be easy for end users, not developers, to customize velocity templates (including CSS and JavaScript) directly.

It would be a good idea to add velocity templates to views in the Asset Publisher portlet. The following is a brief proposal:

1. Define a set of templates (for different views: table, title list, abstracts, full content) in the `/vm` folder (or in some other folder) in Asset Publisher.
2. In the `Render` action, pick up a proper template to generate the view. In addition, variables of velocity templates should consider fields of web structures in order to make summaries localizable.
Summary

This chapter first introduced you to how we can add categories and subcategories in Message Boards. Then, it discussed how to add a tag and manage (add, delete, and update) categories and vocabularies as well as how to tag assets and display tags. Finally, it addressed how to publish assets through the Asset Publisher portlet and how to configure and customize the Asset Publisher portlet.

In this chapter, you learned how to manage the categories, threads, and posts of Message Boards; set permissions on Message Boards categories, threads, and posts; manage tags, tag content, and display tags; set permissions on tags; manage categories, tag content, and display categories; set permissions on categories; and publish Assets through tags and categories.

In the next chapter, we're going to introduce other important content, such as Wiki, Web Forms, and Polls.
On the intranet website bookpub.com of the enterprise Palm Tree Publications, it would be useful to keep track of information about editorial guidance and other resources that require frequent editing, for example, to keep track of votes on the topic "Is this book on Liferay a proper book?" and to collect suggestions on subjects such as "Liferay books". A wiki is a social collaborative encyclopedia that allows users to come together and share knowledge in an area. Administrators can add and edit wiki pages, change permissions, and set advanced options. The Wiki portlets provide a straightforward wiki solution, while the Polls portlets provide surveys to assess public opinion. Also, we are going to see a new feature of Liferay 6.2, "Recycle Bin".

This chapter is going to introduce you to wikis, Dynamic Data Lists, and the Polls portlet and show how to configure them and implement requirements based on them.

By the end of this chapter, you will have learned how to:

• Manage (view, update, and delete) nodes of wikis
• Manage (view, update, delete, and search) pages of a given node in a wiki
• Assign permissions on wiki nodes and pages
• Publish wiki pages
• Convert documents
• Use dynamic data lists
Understanding Wikis, Dynamic Data Lists, and Polls

- Configure the Polls portlet
- Display polls
- Recycle Bin

**Understanding Wikis**

In order to provide an environment for employees at the Palm Tree Publications enterprise that keeps track of information about editorial guidance and other resources that require frequent editing, we can use the Wikis portlet (portlet ID 36) in Palm Tree (public pages).

Now, log in to the palm tree site as a site administrator (admin@bookpub.com). Select the Palm Tree site from the dock bar (My Sites) drop-down list. Once you have landed on the Palm Tree site, you can create the "Wiki" page and add the Wiki portlet in the Wiki page. Then, you are ready to create the "Liferay" and "Alfresco" nodes.

**Managing nodes**

As an administrator of the enterprise Palm Tree Publications, we're going to create nodes called "Liferay" and "Alfresco". As we discussed before, Liferay Portal maintains different content for multiple sites, that is, site scope. For example, Palm Tree, Global, and a default page called "FrontPage" for the node "Main" was also created with empty content. First, navigate to Admin | Content under the dock bar menu, and then select Wiki. Here, you will see the wiki main, which will have pages within it. To see all the pages, click on main. You will see something similar to the following screenshot. How does the portal implement these? This is answered in the next section.

![Wiki Control Panel](image)

Figure 5.1: Wiki Control Panel
Adding nodes in a Wiki
First of all, we need to create a node called "Liferay". Let's create a node as follows:

1. Log in as a site administrator, for example, "Palm Tree".
2. Select Admin | Content under the dock bar menu.
3. Click on Wiki under the category Content (Palm Tree) of the site's control panel.
4. By default, the node "Main" is created.
5. Click on the Add Wiki button at the top of the nodes list.
6. Enter the name "Liferay" and the description "Liferay root".
7. Permissions settings keep default settings. In order to configure additional permissions, click on the More Options link.
8. Click on the Save button to save the inputs. Refer to the following screenshot to create a new wiki node.

![Figure 5.2: Creating a new Wiki node](image)

Figure 5.2: Creating a new Wiki node
Of course, you can add other nodes as expected. After creating the node called "Alfresco", we can view Wiki nodes. Nodes are displayed via node names, number of pages, last post date, and the Actions menu next to the node with a set of actions (that are, Edit, Permissions, Import Pages, RSS, Subscribe, Move to the Recycle Bin, and View Removed Attachments). The following screenshot displays the Wiki node list.

In short, we can create a node by clicking on the Add Wiki button and filling the name and, optionally, the description. An initial page called FrontPage (called a wiki article or a wiki page) is created when a new node is created inside the front page.

Generally speaking, a set of pages in groups is called nodes. Each node acts as a whole wiki. Nodes can have their own set of permissions and recent changes list and a listing of all pages. After creating nodes, we can manage wiki nodes easily.

**Editing a node**

Nodes are editable. For example, we plan to change the description of the node "Liferay" from the value "Liferay root" to the value "Liferay Wikis Root". Let's do it by following these steps:

1. Locate the "Liferay" node.
2. Click on the Edit icon from the Actions menu next to the node.
3. Update the description with the value "Liferay Wikis Root".
4. Click on the Save button to save the changes.
Chapter 5

Remove a node

Nodes are removable. For instance, the node "Alfresco" doesn't exist anymore as per our requirement. We have to remove this from the Wiki portlet by following these steps:

1. Locate the "Alfresco" node that you want to remove.
2. Click on the "Move to the Recycle Bin" icon from the Actions menu located next to the node.
3. You will get the message "The Wiki Node Alfresco was moved to the Recycle Bin." with an undo button. If you don't want to remove it, just click undo. It will revert back to its previous position.

Note that removing a node will remove all related pages that belong to this node. Moreover, any comments related to the pages of this node will also get removed.

Viewing RSS feeds

You can view RSS feeds of nodes. If you need to view RSS feeds of the node "Liferay", you can do so by following these steps:

1. Locate the "Liferay" node.
2. Click on the RSS icon from the Actions menu next to the node.

Importing pages

In addition, the portal provides the capability to import pages from MediaWiki. MediaWiki is a free-software Wiki package written in PHP, originally for use on Wikipedia (refer to www.mediaWiki.org for more details).

Suppose that you are going to import pages from MediaWiki to the "Liferay" node; you can do so by following these steps:

1. Locate the "Liferay" node.
2. Click on the Import Pages icon from the Actions menu next to the node.
3. In Import Pages, specify the required or optional items, as shown in the following points and the next screenshot:
Understanding Wikis, Dynamic Data Lists, and Polls

- **Users File (Optional)**: Submit a CSV file along with the e-mail addresses of the users to match with those in the portal. The file should have two columns: username and email address. This file can be obtained using SQL directly from MediaWiki's database.

- **Images File (Optional)**: Submit a ZIP file of the images to import. You can zip the images folder of MediaWiki directly (sometimes it's called "upload"), removing the directories called "archive", "temp", and "thumbs" to reduce the ZIP size since they will be ignored.

- **FrontPage (Optional)**: The default name is "Main Page".

![Figure 5.4: The Wiki import page](image)

- Keep the checkbox enabled for **Import** — only the latest version and not the full history. By default, it's checked — even for **Strict Mode**, which allows you to remove every unrecognizable MediaWiki markup from the imported page.

4. Click on the **Import button** to import, or click on the **Cancel** button to cancel the importing process.
Managing pages
As you can see, the default page FrontPage has been created, which is an entry point. Through the FrontPage page, you can add and manage as many pages as you can imagine.

Adding pages
As an administrator of the enterprise Palm Tree Publications, you would like to add more pages under the Liferay node, namely "Liferay and Alfresco Integration" and "Liferay Book". Let's do it by following these steps:

1. Click on Wiki under the Content category (Palm Tree) of the site's control panel.
2. Click on the name of the "Liferay" node.
3. Click on the Edit icon next to the page "FrontPage".
4. Select the format "Creole".
5. In editing mode, input "[[Liferay and Alfresco Integration]]" and "[[Liferay Book]]", or you can just link the words using the link icon.
6. Type a summary for the current edit if required. Check the checkbox that says this is a minor edit (if it is indeed a minor edit) — note that there is no configuration link as it is an action to an edit.
7. Click on Categorization and on select Category to add categories. Also, input a tag and click on the Add Tags button if you need to add tags, and click on Suggestions to get suggestions for tags.
8. Click on the Publish button when you are ready.
In brief, the most common way to create wiki pages (wiki articles) is usually by creating a link from another article, for example, [[my new page]]. Then, when you click on the link, it will pop up the editing view and ask you to create the new page. The benefit of doing it this way is that we'll interconnect related pages so that it's easier for users to navigate through them. Refer to the screenshot given here for the wiki front page.

Figure 5.5: The Wiki front page
Of course, you can add pages directly. Let's say that you want to add a page called "My Page" under the node "Liferay". Let's add this page by following these steps:

1. Click on Wiki under the category Content (Palm Tree) of the site's control panel.
2. Click on the name of the "Liferay" node.
3. Click on the Add Page icon under the "All Pages" page.
4. Enter the page title "My Page"—note that there is a configuration link here because we add a page instead of editing it.
5. Permissions settings keep default settings. In order to configure additional permissions, click on the More Options link.
6. Click on the Publish button to publish the changes.

The following screenshot illustrates the Wiki All Pages where you can see the list of pages.

![Image of Wiki All Pages](image)

As mentioned earlier, there are three editing modes in the current version, that is, formats to edit wiki pages—Creole, HTML, and MediaWiki. Select one of the editing modes. By default, the Creole editing mode is selected. After selecting the mode, the body section editor will change from Classic to Plain Text. In the following section, you will come to know how to configure it.
Liferay wiki is more advanced with the introduction of the FCK editor in the Creole and HTML formats. Most of the wiki Creole syntax will be written easily by the editor.

Creole is a common wiki markup language used across different wikis that enables wiki users to transfer content seamlessly across wikis and enables novice users to contribute more easily. Refer to http://wikicreole.org/ for more details.

You can definitely follow the wiki Creole mode syntax to edit wiki pages. For example, represent internal links by beginning with double brackets ([[]), with the page display name in the middle, and ending with double brackets (]]). On the other hand, you can represent external links by beginning with double brackets ([[], then the URL, a vertical bar (|), the display name, and ending with double brackets (]]), or using the URL directly.

You can simply start typing a tag in the tag textbox, and you will see a list of tags. Just select the tags you want, and you will see the tag showing up adjacent to the box. You can remove a tag by clicking on the mark "[x]" located next to the tag.

Of course, you can create other pages that you need. Let's say that we need to add a page called "Book Wiki" under the "Liferay Book" page. Let's do it by following these steps:

1. Locate the "Liferay" node.
2. Click on the name of the "Liferay" node.
3. Find the "Liferay Book" link by clicking on the front page and clicking on the name "Liferay Book".
4. Click on the Edit icon next to the page "Liferay Book".
5. Select the format, for example, "Creole".
6. In the editing page, input "[[Book Wiki]]" or other content.
7. Type the summary of the current edit if required in the description textbox. Check the checkbox that says this is a minor edit (if it is a minor edit indeed).
8. Click on Categorization and on select Category to add categories. Also, input a tag and click on the Add Tags button if you need to add tags, and click Suggestions to get the tags suggestions.
9. Permissions settings keep default settings. In order to configure additional permissions, click on the More Options link.
10. Click on the Publish button when you are ready.
Viewing pages

As shown in the following screenshot, the Wiki portlet provides rich messages about wiki pages. This message is grouped into different sections: Content, Details, History, Incoming Links, Outgoing Links, and Attachment. As you have noticed, while editing a wiki page, it will bring you to the Details | Content tab, where "Details" is an icon next to the Edit icon.

![Figure 5.7: The Wiki front page details](image)

In order to create new pages (Wiki Article), you need to edit an existing page and use the syntax to create a link to the new page. When the page is created instead of being converted to a link, the name of the new page is identified by the link. When you click on the name, the portlet will create the page automatically. Furthermore, you can edit it regularly once the page is created. At the same time, the name of the page on the original page will be converted to a link.
You may need to view Page Links—either outgoing links or incoming links for the page "Liferay Book". You can do it by following these steps:

1. Locate and click on the "Liferay" node.
2. Locate the "Liferay Book" link from the front page, and click on the name "Liferay Book".
3. Click on Details | Incoming Links or Details | Outgoing Links. A list of pages with the current page as incoming links or outgoing links will appear, that is, for "Liferay Book", an incoming link is "Front Page" and an outgoing link is "Book wiki".

A wiki page can have many attachments, which can be managed by clicking on Details | Attachments. The functionality related to the attachments' management includes the dragging and dropping of the files that you want to attach but isn't limited to adding attachments, viewing attachments, downloading attachments, and removing a specific attachment. To have a clear picture on Wiki Outgoing Link, you can refer to the following screenshot:

![Figure 5.8: Wiki outgoing links](image)

You may need to view the page history of the "Liferay Book" page. You can do it as shown in the preceding screenshot by following these steps:

1. Locate and click on the "Liferay" node.
2. Find and click on the name "Liferay Book".
3. Click on Details | History. You will find the Activities and Versions tabs. Click on the Versions tab, and a list of pages with their histories (different versions with minor edits or major edits) will appear.
As you can see, you can compare versions by selecting different versions and clicking on the **Compare Versions** button. Alternatively, you can bring the content of a page back to a specific version by clicking on the **Revert** icon.

Printing the wiki page is very simple: click on the print icon on the wiki page, which is in the top-right corner.

### Searching pages

Searching a page in the Wiki portlets provides you with a list of search results, as shown in the following screenshot for a specific node. The node here could represent an entire wiki. To search wiki pages, first locate a node, say "Liferay". Then, input a search criterion, say "book", and click on the **Search** button on the wiki menu bar. A list page, wiki name (Node name), and page title will appear below the **Search** button. Additionally, you will have the ability to create a new page on this topic as well.

![Search](image)

In the Wiki menu, you will see few useful links, such as **FrontPage**, **Recent Changes**, **All Pages**, **Orphan Pages**, and **Draft Pages**, even including the **Search Box**. FrontPage is the entry point of the node and contains the message "This page is empty. Edit it to add some text".
As an administrator, you may be interested in the recent changes of all the pages in a given node. To do so, you can use Recent Changes. When you click on the Recent Changes link, a list of pages with columns (Page, Status, Revision, User, Date, Summary, and a set of actions — Edit, Permissions, Copy, Move, Subscribe, and Move to the Recycle Bin) will appear and be ordered by their modified dates. As you can see, you can manage these pages in order to edit a page, assign permissions on the page, copy a page, move a page, subscribe or unsubscribe a page, and even remove a page. Moreover, you may be interested in RSS feeds, such as Atom 1.0, RSS 1.0, and RSS 2.0. Note that RSS feeds are used for pages with recent changes to a given node. The following screenshot shows this:

![Recent Changes Screenshot](image)

Figure 5.10: Recent changes

Similarly, you can view all of the pages of a given node. Simply click on the All Pages link. When all of the pages of a given node are displayed, you would be able to add a page by clicking on the Add Page button. To view orphan pages (the pages that don't have parent pages associated with them), simply click on the Orphan Pages link.

**Adding comments**

As stated previously, the administrator has created a page called "Liferay Book". As a user of the enterprise Palm Tree Publications, say "Lotti Stein", if you want to review this page and add comments, such as "This is a good book", you can do it just by following these steps:

1. Log in as "Lotti Stein".
2. Navigate to the "Wiki" Page as mentioned earlier in the Palm Tree site.
3. Locate the "Liferay" node and click on it.

4. Locate the **Add Comments** link at the bottom of the page. If there is no comment, you will see this message with a link "No Comments yet. Be the first." Refer to the following screenshot.

5. Input the comment "This is a good book".

6. Finally, click on the **Reply** button to save the inputs.

For further reference, you can follow this screenshot, which gives you a clear picture of **Wiki Comments**:

![Figure 5.11: Wiki comments](Image)

As an administrator, you can view comments from "Lotti Stein" for the page "Liferay Book" through the "Liferay" node.

As you can see, you can add as many comments as possible and manage comments (perform update, delete, and add vote on comments) if you have the proper permissions. Note that a user can only vote once on a specific comment.
To reply to a comment, first locate the comment that you want to reply to. Then, click on the Post Reply icon in the bottom-right corner of the comment. Input comments, and then click on the Reply button to save the inputs, or click on the Cancel button to cancel.

To delete a comment, click on the Delete icon in the bottom-right corner of the comment. A screen will appear asking you whether you want to delete this. Click on OK to confirm the deletion or on Cancel to cancel the deletion.

[Note that only the current comment has been deleted in action. The low-level comments related to the current comment will have a link to the parent comment of the current comment.]

To go to the top of the comments, simply click on the Top button in the bottom-right corner of any comment.

Generally, to add discussions for the current page, first simply click on Add Comments at the bottom of the page. Then, simply input comments and finally, click on the Reply button to save the comments or on the Cancel button to cancel the comments.

Additionally, to edit a comment, first simply click on the Edit icon at the bottom of the post if you have proper permissions. Then, change the comments by clicking on the Publish button to save the changes or on the Cancel button to cancel the changes.

Adding ratings

In addition, users can add ratings for wiki pages. As an end user, you may have different options on pages, thus you can rate the content of a specific page. The Wiki portlet provides the ability to allow the end user to rate the contents of wiki pages—rating a wiki page from one to five stars. Note that a user can only vote once on a specific page. A user can vote for each comment on the same page. However, it will be counted as one vote in the statistics. This allows users to change their vote. For a clearer picture, refer to Figure 5.11.
Chapter 5

Subscribing to nodes and Wiki pages

Being users of wiki pages, you would be interested in the wiki pages' changes in a specific node. For example, as a member of the Palm Tree group, you may be interested in the pages in the "Liferay" node. You expect to watch out for any changes in the pages in this node. Therefore, you can use a subscription function on the "Liferay" node. Let's do it by following these steps:

1. Locate the "Liferay" node.
2. Click on the **Subscribe** icon from the **Actions** menu next to the node. The **Subscribe** icon will become the **Unsubscribe** icon for this node.

Of course, you can subscribe to other nodes. You may be interested in any changes to the "Liferay and Alfresco Integration" page. Thus, you can subscribe to it by following these steps:

1. Click on the "Liferay" node—you would see the page "FrontPage".
2. Click on the **All Pages** link.
3. Locate the page "Liferay and Alfresco Integration".
4. Click on the **Subscribe** icon from the **Actions** menu next to the page. The **Subscribe** icon will become **Unsubscribe**.

Obviously, you can subscribe to other pages. Optionally, you can go to **Details | Email subscription** in order to either subscribe to, or unsubscribe from, the current page or even current node.

If you have nodes or pages you've subscribed to and the content of the subscribed node or page gets changed, then you will receive notifications for these changes. Moreover, node subscription provides the useful function of notifying by e-mail when the node and its pages have been updated. Page subscription provides the useful function of notifying by e-mail when the content of the page has been updated.

Assigning permissions

We have used the default settings for the Wikis portlet in the page "Wikis". When you're logged in as a "Palm Tree" administrator, you can manage Wiki. As you know, the user "Lotti Stein" is a member of Palm Tree. When Lotti logs in, Lotti sees the nodes "Liferay" and "Main", but Lotti doesn't have the ability to add new nodes or update existing nodes.
Understanding Wikis, Dynamic Data Lists, and Polls

What's happening? This is something related to permissions. Permissions for Wiki can be assigned under Site Administration. Under Site Administration | Content | Wiki, another one is Site Administration | Application | Wiki. Moreover, each has a different set of permission level.

To set the permission entitlements for wiki, the portal administrator needs to define permissions in roles. Under the User section, click on Roles in Control Panel and locate MB Topic Admin. Select define permissions from the Action button beside MB Topic Admin. Search for Wiki. You will get the entitlements settings for wiki:

- Site Administration | Content | Wiki: General Permissions, Resource Permissions (Wiki Nodes, Wiki Node, and Wiki Page).
- Site Administration | Application | Wiki: Application Permissions, Resource Permissions (Wiki Nodes, Wiki Node, and Wiki Page).

Let's discuss each of them one by one in detail.

**Wiki Nodes**

Wiki Nodes has two entitlements, that is, Add Node and Permissions. Refer to the following screenshot:

![Wiki Nodes](image)

Figure 5.12: Permission for Wiki nodes

**Portal Admin** has the ability to set up permissions. By default, only the portal administrator and site administrator have these permissions enabled. Let's provide MB Topic Admin with the ability to use Add Node:

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
<th>MB Topic Admin</th>
<th>Site Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Node</td>
<td>This provides the ability to add a top-level category</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permissions</td>
<td>This provides the ability to set up permissions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Obviously, as a member of the Palm Tree site, "Lotti Stein" doesn't have the permission to use Add Node on Wikis by default. Note that the Add Node permission is scoped to a group or portal instance. If you want the user "Lotti Stein" to have the ability to add nodes for all groups in the current portal instance, how will you implement it? The following is an example of how to assign the permission action Add Node:

1. Log in as an admin of the "Palm Tree" portal.
2. First, click on Roles under the Users category of Control Panel.
3. Then, locate a role, say "MB Topic Admin".
4. Then, click on the Define Permissions icon from Actions on the right-hand side of the role.
5. From the left-hand side tree menu, select Site Administration | Content | Wiki: Resource Permissions | Wiki Nodes and check the Add Node checkbox.
6. Finally, click on the Save button when you are ready.

That's it! From now onwards, the user "Lotti Stein" has the Add Node permissions on Wiki via the "MB Topic Admin" role.

Note that "Lotti Stein" should have access to Site Administrator | Content | Wiki. Here she will have access to Add Wiki (Node).

**Wiki General Permissions**

Wiki General Permissions has four entitlements, which are, Access in Site Administrator, Configuration, Permissions, and View. Refer to the following screenshot:

![General Permissions](image)

Figure 5.13: Site content permission for the Wiki portlet

If any Role needs access to the wiki portlet inside Site Administrator, the Access in Site Administration permission helps with the setting.
The permission action Access in Site Administration represents the ability to access the Wiki portlet in Site Administration. By default, the user "Lotti Stein" doesn't have the ability to access the Wiki portlet in Site Administration. Let's provide MB Topic Admin with the permission action **Access in Site Administration**.

What's the permission action **Access in the Site Administration**? This permission action represents the ability to access the Wiki portlet in Site Administration. By default, the user "Lotti Stein" doesn't have the ability to access the Wiki portlet in Site Administration. But the requirement is that the user "Lotti Stein" should have the ability to access the Wiki portlet in Site Administration.

Simply check the box beside **Access in the Site Administration** and save it. All users who have MB Topic Admin will have the ability to access the wiki portlet in site administration.

**Wiki Node**

Wiki Node permission entitlements are basically permissions for each node action, such as, Add Attachment, Add Page, Delete, Import, Permissions, Subscribe, Update, and View. Refer to the following screenshot:

![Wiki Node](image)

Figure 5.14 Site content permission for Wiki Node

The preceding screenshot shows permissions on a node in the Wiki portlet. The role **MB Topic Admin** is able to set up permissions, namely View, Update, Subscribe, Permissions, Import, Delete, Add Page, and Add Attachments. On the other hand, the role Guest can set up permissions with View, Delete, Permissions, Import, and Add Attachments.
Let's add the View permission to MB Topic Admin so that "Lotti Stein" has the permission to view the Node and allow more actions, such as Delete, Permissions, and Update.

Follow these steps to set the permissions:

1. Log in as an admin, say "Palm Tree".
2. Click on Roles under the Portal category of Control Panel.
3. Then, locate a role, say "MB Topic Admin".
4. Then, click on the Define Permissions icon from the Actions menu next to the right of the role.
5. From the left-hand side tree menu, select Site Administration | Content | Wiki: Resource Permissions | Wiki Node, and check the Delete, Permissions, Update, and View checkboxes.
6. Finally, click on the Save button when you are ready.
7. Now "Lotti Stein" will be able to view, update, delete, and set the permission for the Node "Liferay".

Note that you need to map Lotti Stein with the MB Topic Admin role. Once it's done, Lotti will have all the permissions defined.

**Wiki Page**

Wiki Page permission entitlements are basically provided on pages such as Add Discussion, Delete, Delete Discussion, Permissions, Subscribe, Update, Update Discussion, and View. Refer to the following screenshot:

![Wiki Page Permissions](image)

Figure 5.15: Site content permission for Wiki Page
Understanding Wikis, Dynamic Data Lists, and Polls

The screenshot shows permissions on a page of a given node. The MB Topic Admin Member role can set up permissions such as View, Delete, Permissions, Update, Subscribe, Add Discussion, Delete Discussion, and Update Discussion, whereas the role site member can set up permissions including View, Delete, Add Discussion, and Subscribe. By default, the MB Topic Admin member role has permission actions, such as View, Update, and Add Discussion, whereas the role site member only has the View permission.

As you can see, as a site member, "Lotti Stein" only has the permissions View, Update, Add Discussion, and Subscribe on the pages. This is because the pages under the "Liferay" node have been added by default settings. She doesn't have permissions such as Delete and Permissions, among others.

In general, you are able to assign permissions on pages on two levels: individually or in groups. As shown in the preceding screenshot, you can locate a page first, go to Details | Permissions, and assign permission on individual pages via the roles. Furthermore, you can assign permissions in pages through roles in Control Panel.

If the role is a regular role, you can assign permissions on pages scoped into the current portal instance. On the other hand, if the role is either an organization role or a site role, you can assign permissions on pages scoped into a group, either an organization or site.

Application Permissions

Application Permissions has two entitlements, that is, Add Display Templates and Add to Page, Configuration, Permissions and View. Refer to the following screenshot:

![Application Permissions](image)

Figure 5.16: Wiki Application Permissions
Site Application permissions affect the application with respect to the portal. So, let’s see, with a Wiki example, how application permission allows us to define who can add the Wiki portlet to a page. You can provide permission to the MB Topic Admin member. Otherwise, you can provide permission to either the organization or site admin.

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
<th>MB Topic Admin</th>
<th>Site Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Display Template</td>
<td>This provides the ability to add display templates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add to Page</td>
<td>This provides the ability to add the portlet wiki portlet in page</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Configuration</td>
<td>This provides the ability to configure the portlet</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Permissions</td>
<td>This provides the ability to set up permissions</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view the content of the portlet</td>
<td>X, *</td>
<td>*</td>
</tr>
</tbody>
</table>

**Permissions on the Wiki portlet**

Wiki portlets have configuration links that allow the setting of permissions for different roles on a particular instance of wiki. The administrator can set permissions on a Wiki portlet very easily. Refer to the following screenshot:

![Permissions on the Wiki portlet](image)

Figure 5.17: Permissions on the Wiki portlet
The permission on the Wiki portlet allows the configuration of actions performed by the different roles in the portal. This permission will be set for specific site content only.

**Using the Wiki portlet effectively**

Wiki was originally described as a simple online database. Actually, a Wiki is a web-based collaboration platform that lets any user write, place pictures, and post links anywhere on any page so that anyone can edit anything on any page. You can do it through the web interface without the need for any additional software. Certainly, you don't need to learn HTML or wait for a designated webmaster to upload your files.

**Understanding the characteristics of Wikis**

You can write Wiki documents collaboratively in a simple markup language using a web browser. Here, a single page in Wiki is called a Wiki page, while the entire body of pages, which are usually highly interconnected via hyperlinks, is the Wiki. Basically, a wiki is a database to create, browse, and search information.

A Wiki page can be created and updated simply. However, there is no review before modifications are accepted for a Wiki page. On the one hand, certain Wikis may be open to the general public without the need to register any user account. In order to acquire a Wiki-signature cookie for auto-signing edits, you need to log in for a session. However, many edits on a Wiki page can be made in real time and appear online almost instantaneously. This can lead to abuse of the system. On the other hand, private Wiki pages require user authentication to edit pages, add new pages, and even read pages.

**Understanding the pros and cons of Wikis**

Wikis have their own advantages and disadvantages. The advantages include the following:

- There is no need to install HTML authoring tools
- Minimal amount of training is required
- It can help develop a culture of sharing and working together
- It's useful to work jointly when there are shared goals you have agreed upon
The disadvantages of Wikis include the following:

- The success of one wiki (such as Wikipedia) may not necessarily be replicated by another.
- A collaborative Wiki may suffer from the lack of a strong vision.
- There may be copyright and other legal issues about collaborative content.
- It can be ineffective when there is a lack of consensus and when navigation is less efficient than in a really collaborative website. This is because there are no real pages, tree views, menus, or breadcrumbs. When using a wiki, we often use the search engine instead of navigating naturally in a tree. That gives the feeling that pages are not organized.


**Wiki uses**

Wikis are useful for a number of purposes. We just list some of them as follows:

- Wikis enable users to contribute information on public websites easily
- Wikis provide an opportunity to learn about teamwork and trust in teaching
- Wikis make it easier to develop collaborative documents for researchers
- Wikis provide the ability to manage departmental content on intranets and are useful for departmental administrators with minimum HTML experience
- Wikis can also be used as knowledge centers
- Wikis are useful at events for note-taking in discussion groups

**Using Liferay wikis**

Liferay wikis allow the creation of content in a collaborative style. It is based on Wiki Creole with the features discussed here as well as those that are commonly found in good wikis, including content parsing, Access Control List (ACL) security style, easy-to-use macros, easy-to-adapt security, versioning, and managing all content and security with console tools.

For more information on Wiki engine, you can visit http://www.wikicreole.org/wiki.
Pages are considered as groups, which again have multiple connections called nodes in Liferay. Each node can act as a whole wiki. It has its own set of permissions, recent changes list, and listing of all pages, such as Wiki articles. The wiki in Liferay has a very powerful functionality with its robust security model. For example, users can use the wiki in the traditional way (open to public) or as a tool to organize private information for certain organizations or user groups of people.

The following diagram depicts the Liferay wiki structure overview. Liferay Wiki is made up of a set of nodes. Each node can have many pages. Each node has at least one page called "Front Page" by default. Each page can have many comments. In addition, each wiki page can have many versions, ratings, and attachments. Moreover, each page can have subscriptions, tags, and categories associated with it. For further details, refer to the following diagram:

![Diagram of Liferay Wiki structure overview](image)

In general, Wiki comes with three editing modes: Creole, HTML, and MediaWiki.

**Understanding the Creole mode**

Syntax helps you to get the following details on the Creole mode:

- **Text Styles**: Italics (should begin with double slashes (/ /), followed by text, and end with double slashes), bold (should begin with two asterisks (**), followed by text, and end with two asterisks).

- **Headers**: Large headings should begin with two equals signs (==), followed by text, and end with two equals signs. Medium headings should begin with three equals signs, followed by text, and end with triple equals signs (===). On the other hand, small headings should begin with quadruple equals signs (====), followed by text, and end with quadruple equals signs.

- **Links**: Internal links should begin with double brackets ([[]]), followed by the page title, and end with double brackets [[]]. External links should begin with double brackets ([[ ]]) followed by the URL, optionally the vertical bar (|), followed by the display name, and end with double brackets (]]).
Chapter 5

• **Lists:** Items should begin with an asterisk (*) and end with text. Sub-items should begin with double asterisks (**) and end with text, ordered items should begin with a number sign (#) and end with text, whereas ordered sub-items should begin with double number signs (##) and end with text.

• **Images:** The attached image should begin with double brackets ({{}), followed by an attached image filename, and end with double brackets (}}). The page image should begin with double brackets ({{), page name, slash (/), page image filename, optionally vertical bar (|), followed by a label, and end with double brackets (}}).

• **Table of contents:** This should begin with double brackets (<<), followed by the keyword Table Of Contents, and end with double brackets (>>).

• **Preformatted:** It should begin with triple brackets ({{{|), the keyword Preformatted, and end with triple brackets (}}}).

Understanding the HTML mode

The text area incorporates an embedded HTML text editor in the HTML mode. The HTML mode allows the user to write the document in a WYSIWYG editor, which is similar to how users work in MS Word or OpenOffice. What's an HTML text editor? How to use the WYSIWYG editor? Refer to the instructions given in Chapter 6, Blogs, WYSIWYG Editors, and Social Networking.

Understanding the MediaWiki mode

Currently, MediaWiki is the text area that incorporates pure plain text. It is the same as editing the source in an HTML text editor. For more help, you can visit http://www.mediawiki.org.

Configuration

As an administrator of the enterprise Palm Tree Publications, you can set up the Wiki portlet as well. For example, you can configure subscription e-mails. Let's say that the Wiki portlet was added to the page "Wiki" of the Guest group and you are going to configure the portlet in this way.

To configure the Wiki portlet, include the subscription function in the following way: click on Gear (icon) | Configuration in the upper-right corner of the Wiki portlet. With the Setup | Display Setting tab selected, there is a set of sub-tabs, namely Email from, Page added email, Page updated email, and RSS.
In addition, under the tab **Display Settings**, you can see the following settings:

- **Enable Related Assets**: This enables the display of related assets
- **Enable Page Ratings**: This enables the display of page ratings
- **Enable Comments**: This enables comments
- **Enable Comment Ratings**: This enables comment ratings
- **Visible Wikis**: This enables multiple selection of Wiki nodes

The **Email From** name is **Admin** and the **From-Address** is **admin@liferay.com** by default. This means that the portal will use the name and address as e-mail **From-Name** and **From-Address**. You can change the settings as per your requirement and save it.

### Setting properties for Wikis

As you saw, when the portal started, the default node "Main" and page "FrontPage" were created for the Guest group. "What's happening?", you may ask. The portal has the following default settings in `portal.properties`:

```
wiki.front.page.name=FrontPage
wiki.initial.node.name=Main
```

As shown in the preceding code, it sets the name of the default page for a Wiki node as **FrontPage**. Note that the name for the default page must be a valid Wiki word, that is, the first letter should be in uppercase. A Wiki word follows the format of upper Camel case or Pascal case letters. It also sets the name of the default node as **Main**, and that will be automatically created when the Wiki portlet is first used in a group, such as an organization or as a. Of course, you can override these properties in `portal-ext.properties`.

Moreover, when you input a value for the Wiki page title, the portal will validate the title. Similarly, when viewing the Wiki page, you will be able to add ratings and comments. In fact, the portal has the following settings in `portal.properties`:

```
wiki.page.titles.regexp={[^\\\[\\]\|:;%<]>}+
wiki.page.titles.remove.regexp={\[\\\[\\]\|:;%<]>}+
wiki.page.ratings.enabled=true
wiki.page.comments.enabled=true
wiki.formats=creole,html,mediawiki
wiki.formats.default=creole
```
As shown in the preceding code, it specifies validation for the names of Wiki pages via the \texttt{wiki.page.titles.regexp} property. By default, only a few characters are forbidden. You can uncomment the preceding regular expression to allow only Camel case titles. It also specifies the characters that will be automatically removed from the titles when importing Wiki pages using the \texttt{wiki.page.titles.remove.regex} property. This should remove any characters that are forbidden in the regexp specified in the \texttt{wiki.page.titles.regexp} property.

In addition, it sets the \texttt{wiki.page.ratings.enabled} property to \texttt{true} to enable ratings for Wiki pages and the \texttt{wiki.page.comments.enabled} property to \texttt{true} to enable comments for Wiki pages. It sets the list of supported Wiki formats via the \texttt{wiki.formats} property and the default wiki format via the \texttt{wiki.formats.default} property. You can definitely customize these properties in \texttt{portal-ext.properties}.

More interestingly, Wiki importers, e-mail notifications, and RSS abstracts are configurable. The portal has specified the following properties in \texttt{portal.properties}:

\begin{verbatim}
Wiki.importers=MediaWiki
Wiki.email.from.name=
Wiki.email.from.address=
Wiki.email.page.added.enabled=true
Wiki.email.page.updated.enabled=true
Wiki.rss.abstract.length=200
\end{verbatim}

As shown in the preceding code, the portal sets the list of supported wiki importers via the \texttt{wiki.importers} property. By default, \texttt{MediaWiki} is supported. It configures e-mail notification settings via the \texttt{wiki.email.from.name}, \texttt{wiki.email.from.address}, \texttt{wiki.email.page.added.enabled}, and \texttt{wiki.email.page.updated.enabled} properties. Finally, the portal sets the maximum length of the RSS abstract to 200 via the \texttt{wiki.rss.abstract.length} property.

Of course, you can override this property in \texttt{portal-ext.properties} depending on your requirements.

**Wikis in scope**

More interestingly, one of the most powerful characteristics of the Wiki portlet is the fact that when wikis are added to different groups, they act as completely independent portlets—each with its own data. By default, the Wiki portlet is scoped into a group—when portlets are added to a group, be they public or private pages, they act as the same portlets.
For instance, when the portlet Wiki is added to a page—for example—"Wikis" of the Site A, the default scope will be used for Site A. If you add the Wiki portlet to a second page, say "Welcome", it will show the same data as that of the first page. As you can see, the Wiki portlet is scoped into Site A, and when it is added to any pages of the same site, it seems that you don't have the flexibility to switch sites in this case. Fortunately, this limitation could be overcome through the settings. In the configuration, you are able to shift the content of the Wiki portlet to a different site. You can do this by following these simple steps.

The Wiki portlet could get scoped into a page. How to scope a Wiki portlet into a page? The following is just a sample:

1. Click on the "Wiki" page, where the Wiki portlet is displayed.
2. Go to Gear (icon) | Configuration of the Wiki portlet.
3. Click on the Scope tab.
4. Choose Wiki (Create New) from the Scope select menu, and click on the Save button.

Considering the pattern Portal-Site-Page-Content, the content of the Wiki portlet could be scoped into a group—for example, all pages, including both private and public pages by default. It could also be scoped into an individual page—this means that a set of data, for example, nodes and pages, is isolated from other data of the same portlet.

How can we customize the scope feature? The portal has default settings for the Wiki portlet in $PORTAL_ROOT_HOME/WEB-INF/liferay-portlet.xml:

```xml
<control-panel-entry-category>site_administration.content</control-panel-entry-category>
<control-panel-entry-weight>7.0</control-panel-entry-weight>
<scopeable>true</scopeable>
```

As shown in the preceding code, the Wiki portlet will appear in the Site Administration category content in position 7, and it is scope-able. This means that you are able to use Gear (icon) | Configuration | Scope and change the scope from default to the current page.
Wikis in communication

Note that there is a Communication tab under Gear (icon) | Configuration, and the shared parameters could be mapped into categoryId, nodeId, tag, nodeName, resetCur, and title because the portlet has the following configuration in $PORTAL_ROOT_HOME/WEB-INF/portlet-custom.xml:

```xml
<supported-public-render-parameter>categoryId</supported-public-render-parameter>
<supported-public-render-parameter>nodeId</supported-public-render-parameter>
<supported-public-render-parameter>nodeName</supported-public-render-parameter>
<supported-public-render-parameter>resetCur</supported-public-render-parameter>
<supported-public-render-parameter>tag</supported-public-render-parameter>
<supported-public-render-parameter>title</supported-public-render-parameter>
```

As shown in the preceding code, there are six parameters, namely categoryId, nodeId, tag, nodeName, resetCur, and title. You can set mapping among these parameters or even ignore some or all of them in the Gear (icon) | Configuration | Communication tab. You can add Tags and Category Navigation portlets in the wiki page so that you can see by yourselves all the benefits of using this configuration.

Enhancement

As you can see, the portal provides the capability to display recent changes on pages. It would be nice if the time period could be configurable, such as a day, week, month, and so on. Of course, you can have other expectations from the Wiki portlet.
Publishing wiki pages

We have discussed how to create nodes and how to add pages in order to keep track of information about editorial guidance and other resources that require frequent editing. As an administrator at the Palm Tree Publications enterprise, you have created the node Liferay. Now, you can publish Wiki articles for the node Liferay, as shown in the following screenshot:

Let's add Wiki Display in the page "Wiki". Follow these steps to configure the Wiki display:

1. Click on Gear (icon) | Configuration | Setup | in the upper-right corner of the Wiki display portlet.
2. Select a node name "Liferay" that you want to publish as a Wiki in your page and the page "Liferay Book".
3. Click on the Save button to save the changes.

Obviously, the Wiki Display portlet (portlet ID 54) provides a way to publish Wiki articles in a page of a site. The following screenshot depicts the Wiki display portlet in a Wiki page.
As a member of the Palm Tree site, "Lotti Stein" can have the proper permission to edit the current Wiki page by clicking on the Edit link next to the Wiki page title, add comments on the current Wiki page, and add ratings to the current Wiki page. Note that users can only rate once on a specific page. The vote will be counted once, but users can change their rating later.

Figure 5.20: Wiki Display portlet

Additionally, you will also be able to change permissions on wiki pages if you have the proper access rights to do so. By clicking on the Details link, you would be able to view Content, Details, History, Incoming Links, Outgoing Links, and Attachments, and the same functions as that of the Wiki portlet. Last but not least, you can print the current wiki page by clicking on the print icon next to the wiki page title.

**Benefit of the Wiki Displayportlet**

The Wiki Display portlet allows the publishing of specific Wiki nodes, while hiding a lot of administration options.

Firstly, the Wiki Display portlet is configurable—you can configure a specific node and Wiki page to be published. Secondly, the Wiki Display portlet is *instanceable*. Therefore, you can add more than one Wiki Display portlet to a given page. Thirdly, it hides a lot of administration options, such as managing Wiki nodes.
Assigning permissions

As a user at the Palm Tree Publications enterprise, say "Lotti Stein", you have the permission to edit the current Wiki page and add comments on the current Wiki page. However, you can't change page permissions because you don't have proper access rights to do so. This is something related to permissions.

Obviously, as a site member, "Lotti Stein" only has the permissions View and Add Discussion on the pages because the pages under "Liferay" have been added by default settings. Thus, she doesn't have permissions such as Delete, Permissions, Delete Discussion, and Update Discussion. Refer to the following screenshot:

![Figure 5.21: Wiki Display portlet permissions](image)

As an administrator, you may need to set up the Site Member role with the permissions View and Update only on the page "Liferay Book" of the node "Liferay". That is, you need to remove the Add Discussion and Subscribe permissions on the page "Liferay Book" of the node "Liferay" for the site Palm Tree. Let's do it by following these steps:

1. Click on the Details | Permissions icon next to the page "Liferay Book".
2. Uncheck the permissions Add Discussion and Subscribe under the role "Site Member".
3. Click on the Save button if you are ready.
Now, as a site member, "Lotti Stein" has the View and Update permissions on the "Liferay Book" page of the node "Liferay". If you try to log in as "Lotti Stein", you will see the "Liferay Book" page of the node "Liferay" without the "Add Comments" icon. You can go to Details | Details, but you wouldn't see the "Subscribe" icon for the current page.

Note that you can only assign permissions on individual pages using the Wiki Display portlet. If you want to assign permissions at the group level or at the portal instance level, you need to define permissions of roles under Users in Control Panel.

In addition, there are View and Configuration permissions on the portlet. By default, the Site Member and Guest roles have the View permission on the Wiki Display portlet.

**Setting properties for the Wiki Display portlet**

As you can see, you can add more than one Wiki Display portlet in a given page, while there is only one Wiki portlet in the page. Why are they different? The Wiki Display portlet was specified as being instanceable in $PORTAL_ROOT_HOME/WEB-INF/liferay-portlet.xml. This is as follows:

```
<configuration-action-class>com.liferay.portal.kernel.portlet.
  DefaultConfigurationAction</configuration-action-class>
<portlet-url-class>com.liferay.portal.struts.StrutsAction
  PortletURL</portlet-url-class>
<instanceable>true</instanceable>
<scopeable>true</scopeable>
```

As shown in the preceding code, the Wiki Display portlet specified the tag instanceable with the value true. This is the reason why you can add more than one Wiki Display portlet to a given page. Moreover, the portlet Wiki Display has specified the tag configuration-action-class with a value com.liferay.portlet.Wikidisplay.action.ConfigurationActionImpl. Therefore, after clicking on Gear (icon) | Configuration in the upper-right corner of the portlet, you can see Setup, permission, sharing, and scope, that is, the Wiki Display portlet is configurable.
As you can see, the Wiki Display portlet is scopeable. The Wiki Display portlet is scoped into the site Palm Tree when it is added to any pages of the site. Moreover, the portlet Wiki Display could get scoped into a page. How can we customize this? To make the Wiki Display portlet using a different data scope, you can follow these simple steps:

1. Locate a page, say "Wiki", and the Wiki Display portlet in the current page.
2. Go to Gear (icon) | Configuration of the Wiki Display portlet.
3. Click on the Scope tab.
4. Choose "Wiki (Create page) from the Scope select menu and click on the Save button.

Considering the Portal-Site-Page-Content pattern, the content of the Wiki Display portlet could be scoped into a site—for example, all pages, including both private and public pages, by default. Furthermore, it could be scoped into an individual page—this means that a set of data, for example, Wiki pages, is isolated from other data of the same portlet.

**Converting documents with OpenOffice**

It would be useful to convert documents of different office formats. For example, in Display Settings of the Asset Publisher portlet, we have the ability to convert current documents to different document formats, for example, DOC, ODT, PDF, RTF, SXW, and TXT. Likewise, we are able to convert Wiki articles to different document formats—for example, DOC, ODT, PDF, RTF, SXW, and TXT. When clicking on the link, for example, PDF, the portal will convert the current Wiki article to that format, that is, PDF. How to achieve this? Let’s integrate OpenOffice into our portal.

**Integrating OpenOffice**

OpenOffice.org is a multiplatform and multilingual office suite and an open source project. First of all, you need to download the latest version of OpenOffice. It is available at [http://www.openoffice.org](http://www.openoffice.org) for every OS. The installation instructions can also be found here. When you install it, make a note of the location because you will need it when setting your OPENOFFICE_HOME variable.

To start OpenOffice as a service, go to $OPENOFFICE_HOME/program and run the following command:

```
Soffice-headless-accept="socket,host=127.0.0.1,port=8100;urp;"
```

As shown in the preceding code, we start OpenOffice as a service with the host 127.0.0.1 and the port 8100.
Configuring OpenOffice

Then, we need to enable OpenOffice integration by providing the document conversion functionality. How do we do this? We could implement this using Server Administration, as shown in the following screenshot:

1. Log in as a portal administrator, for example, "Palm Tree", and then go to Go To | Control Panel under the dock bar menu.
2. Go to Server Administration | External Services under the Configuration section of Control Panel.
3. Check the Enabled checkbox.
4. Finally, click on the Save button.

Note that if OpenOffice was installed on a remote machine, we would have to change the host and port accordingly. How do we implement it?
Properties settings for OpenOffice

The portal provides the capability to enable OpenOffice integration and allows the Document and Media portlet and the Wiki portlet to provide the conversion functionality. The following are the default settings in portal.properties:

```
openoffice.server.enabled=false
openoffice.server.host=127.0.0.1
openoffice.server.port=8100
openoffice.cache.enabled=true
```

The preceding code sets the OpenOffice server by default. As you can see, the property `openoffice.server.enabled` has the value `false`, and the property `openoffice.cache.enabled` has the value `true`. Therefore, by default, the OpenOffice server is disabled and the cache is enabled. The host was specified via the property `openoffice.server.host`, while the port was specified via the property `openoffice.server.port`. By default, OpenOffice was installed in the same machine (127.0.0.1) as that of the portal with port 8100. If OpenOffice was installed on a remote machine, you could override the host using the property `openoffice.server.host` and also the port using the property `openoffice.server.port` in portal-ext.properties.

Converting documents

Through OpenOffice, documents can be converted automatically to multiple formats. For example, the document "Full RESTful integration of Liferay and Alfresco" is originally provided in the plain text format. Thus, we can download it as a text file. At the same time, it can be converted into DOC, ODT, PDF, RTF, SXW, and so on.

Dynamic Data List

In Liferay 6.1, Dynamic Data List is one of the new features. Dynamic Data List provides a very nice feature that helps the portal administrator to create a form and store the data without writing a single line of code, which he can display on the portal page.
Say the organization wants to post a job opening on the portal, they want to list all the best employees of the month, or perhaps the users are allowed to maintain a notebook or To-Do list on their private pages. For such requirements, you have to create a custom plugin portlet, but using the Dynamic Data Lists, an administrator can create a custom form anytime and store the data and display using the Dynamic Data List Display portlet.

Creating new Dynamic Data List

Let's create Dynamic Data List for the Best Employee of the Month. A Dynamic Data List's content is specific to the Site. The Dynamic Data List link will be available under Site Content. Follow the steps to create the Dynamic Data List for Best Employee of the Month.

1. Log in to the Palm Tree site as Site Administrator.
2. Click on Admin | Site Administration | Content from the dock bar menu. Under site content, click on Dynamic Data List.
3. You can view Dynamic Data List that is already created.
4. Click on the Add button; now you can create New List. Fill the details for the new list name as "Employee List" and description as "Best Employee of the Month".
5. Click on Data Definition and select the data definition. If you don't find your required data definition, you can create one by clicking on the Add button at the top.
6. A new pop-up window will appear for New Data Definition, where you can create the new form to enter employee details. Here, you need to define the name as "Employee Listing" and the description as "Best employee of the month".
7. The screen provides you with the drag and drop option to add fields and controls. In the following panel, you can see the left-hand side section for fields and the right-hand side section with a blank panel. You just need to drag the fields and drop them on to the blank panel. In this example, Text, Date, Text box, and Select fields have been used. Refer to the following screenshot:

![Figure 5.23: New data definition](image-url)

Figure 5.23: New data definition
For every field, you can set properties such as Field Label, Show Label, Required, Name, Predefine Value, Tip and width. For the Select field, you can set options as shown in the following screenshot. You can also set the select option values for Select fields by simply entering the values in the options box. You can even make the Select field allow multiple selections by setting the value yes for multiple field in the Settings tab.

![Figure 5.24: Settings for each field](image)

8. Now you can save Data Definition. It will return you to the previous page where it has been listed. You can select it by clicking on Name.

9. If you select the workflow option, it will allow you to set the workflow process. Now, we will keep the default value (no workflow).

10. You can save Dynamic Data List by clicking on the Save button.
Adding a new record
The Dynamic Data List view option will display "Employee List". Once you click on Employee List, you can use "Add Employee Listing" with the form that you just created.

Finally, click on the Publish button to publish the data. Refer to the preceding screenshot for further details.

Viewing data in Dynamic Data List
Now, you will be able to see the data in Dynamic Data Lists for Employee List. See the following screenshot:
Editing the data
You can change values by clicking on edit from the Action button. Once you edit the value, it creates a version each time. So, the change in the data can be captured with regard to a particular entry. Even you can retrieve the previous data anytime.

Dynamic Data List Display
Dynamic Data List Display (portlet 169) is an instanceable portlet that allows you to add multiple portlets on the page. This portlet allows you to display Dynamic Data List to the user.

So, you can place this portlet on a page, where users can access it. Let's place this portlet in the Palm Tree public page.

1. On Palm Tree, create a page with the name Data List.
2. Add the Dynamic Data List Display portlet on the Data List page. This portlet is under the Collaboration category.
3. Now you need to configure the portlet by selecting the Data List name that you want to display. Click on the portlet configuration, select Employee List, and Save it.
4. Once you save it, you get a configuration pop-up window. Follow this screenshot:

![Dynamic Data List Display configuration](image)

Figure 5.27: Dynamic Data List Display configuration

Templates provide the feature of selecting the list template and the default template with two checkboxes: **Editable** and **Spreadsheet** view:

- **Editable**: This allows the end user to edit the data on the data list table
- **Spreadsheet**: This displays the data in the full length of the spreadsheet

**Dynamic Data List** is shown in the portlet as follows:

![Employee list on the Palm Tree page](image)

Figure 5.28: Employee list on the Palm Tree page
In the preceding screenshot, you can see actions below the table. These actions are Add form Template, Add Display Template, Select List, and Add List. These controls are visible since you are logged in as Administrator. If you don't want to show them to any other users, then you need to set the permissions.

**Assigning permissions**

We used the default settings for the Dynamic Data List portlet in the "Data List" page. As a user, "Lotti Stein" should be able to perform a few actions on Dynamic Data List; for that, you have to restrict permissions for Lotti accordingly.

Permissions for Dynamic Data List can be assigned under Site Administration | Content | Dynamic Data Lists.

For the Dynamic Data List Display portlet, permissions can be set under Site Administration | Application | Dynamic Data List Display. Moreover, each has a different set of permission levels.

To set the permission entitlements for Dynamic Data List, the portal administrator needs to define permissions in roles. Under the User section, click on Roles in Control Panel and locate MB Topic Admin. Select define permissions from the Action button beside MB Topic Admin. Search for Dynamic Data List. You will able to see the different permission entitlements for Dynamic Data List:

- **Site Administration | Content | Dynamic Data List**: General Permissions, Resource Permissions (Lists, Dynamic Data Lists Record Set).
- **Site Administration | Application | Dynamic Data List Display**: Application Permissions, Resource Permissions (Dynamic Data Mapping Structure, Dynamic Data Mapping Template).

Let's discuss each of them one by one in detail.

**Site Administration | Content | Dynamic Data List | Lists**

The MB Topic Admin role is able to set up all permissions for Dynamic Data List: Add Record Set, Add Structure, Add Template, and Permissions.
Understanding Wikis, Dynamic Data Lists, and Polls

These actions can be set for MB topic Admin, of which Lotti is a member. For further reference, follow this screenshot:

![Figure 5.29: Site content permission on Dynamic Data List](image)

**Site Administration | Content | Dynamic Data List | Dynamic Data Lists Record Set**

The record set allows the users access to Add Record, Delete record, Set permission on records, Update the records, and View the records. For further details, follow this screenshot:

![Figure 5.30: Site content permission on Dynamic Data List Record Set](image)

**Site Administration | Content | Dynamic Data List | General Permissions**

General permissions allows the users to operate the application in the Site Administration panel. Once a User is granted this permission, they will be able to access the application in the Site Administration panel to perform the configuration and set the permission for Dynamic Data List. See the following screenshot for further details:
Site Administration | Applications | Dynamic Data List Display | Application Permissions

Application Permissions allows the users access to the portal page. You can grant this permission to MB topic Admin so that the user has access to the Add Dynamic Data List Display portlet on the page, along with the ability to configure the portlet. View is, by default, granted to all the users.

For the Dynamic Data List Display portlet, there are two more sections of permission setting, which are, Dynamic data mapping structure and Dynamic data mapping template. Both have the same set of permissions (Delete, Permissions, Update, and View). If you set the permission for Dynamic data mapping structure for any role, generally all the users that have that role will have access to delete the structure, set permission on the structure, update the structure, and view the structure.

As mentioned earlier, the Dynamic data mapping template has the same set of permissions (Delete, Permissions, Update, and View). It's basically there to control the template for Dynamic Data List.
Understanding Polls

Do you want to keep track of votes on "Is Liferay Book a proper book"? The Polls portlet (portlet ID 25) and the Polls Display portlet (portlet ID 59) are useful tools. The Polls portlet allows us to create multiple choice polls that keep track of votes and display results on a page where a lot of separate polls can be managed and that is configurable to display a specific poll's results, while the Polls Display portlet allows us to vote for a specific poll's question and view the results.

The Polls portlet

First of all, we plan to add questions. As an administrator, you might need to create a lot of questions for polls, such as "Will Liferay be the best portal solution for this year 2015?" and "Do you plan to buy a Liferay book next month?" and then manage these questions as well as the votes on these questions. Refer to the following screenshot for more details.

Figure 5.33: Poll New Question
1. Log in as a site admin, say "Palm Tree". Then, click on **Admin | Content** from the dock bar menu, and then select **Polls** from the left-hand side menu.

2. Click on the "**Add Question**" button under the Polls portlet.

3. Input Title "**Liferay Portal Solution**" and Poll Question "Will Liferay be the best portal solution in this year 2015?" You can input the title and poll question in other languages too.

4. Type values for the choices a. and b., for example, "**Yes**" and "**No**". There must be at least two choices—these can't be deleted.

5. Check the **Never Expire** checkbox using default settings, but you can uncheck the checkbox and also set an expiration date.

6. Add more choices by clicking on the **Add Choice** button. After clicking on the **Add Choice** button, you can delete a choice by clicking on the **Delete** button located next to the choice name input box.

7. Permissions settings keep default settings. In order to configure additional permissions, click on the **More Options** link.

8. Click on the **Save** button to save the input.

Of course, you can add other questions. After adding the question "**Do you plan to buy a Liferay book next month?**", you can view the questions:

![Figure 5.34: Polls Question](image)

As shown in the preceding screenshot, poll questions are displayed as question name, numbers of votes, last vote date, expiration date, and actions, with a set of icons: edit, permissions, and delete. By default, this portlet will display all questions scoped into the current site for the current user who has proper permissions.

[Note that the Polls portlet is only visible in **Site Administration** under the category **Content**.](image)
Editing a question

All questions are editable. Suppose that we want to change the title of the questions "Do you plan to buy a Liferay book next month?" to "Liferay Book publishing next month?", we need to update it. Let's do it by following these steps:

1. Locate the question, say **Do you plan to buy Liferay book next month?** in the Polls portlet, and click on the **Edit** icon from **Actions** next to the question.
2. Type the value of the title, such as **Liferay Book publishing next month?**.
3. Click on the **Save** button to save the inputs.

Deleting a question

All questions are removable. Let's say that the question "Do you plan to buy a Liferay book next month?" does not exist anymore. Then, we need to delete it. Let's delete it by following these steps:

1. Locate **Do you plan to buy a Liferay book next month?**, which you want to delete.
2. Click on the **Delete** icon from **Actions** located next to the question.
3. A screen will appear that asks whether you want to delete this. Click on the **OK** button to confirm the deletion.

Viewing votes

Suppose that you want to view votes for the question "Will Liferay be the best portal solution in this year 2015?" in different ways. You can simply click on the name of the question and then click on **View Results**. You will see votes in percentage or other charts, such as Area, Horizontal Bar, Line, Pie, and Vertical Bar. Furthermore, you can view actual voters if you have proper permissions.

There are three votes on the question "Will Liferay be the best portal solution in this year 2015?". You could see votes in percentage, by actual voters displayed together with their choice and vote date, and in a Pie chart as an example.
Setting properties for Polls

As you can see, the Polls portlet is located at position 10 under the Content category of the Site Administrator panel. At the same time, you will have the capability to export/import polls under the Gear (icon) | Export/Import. "Why?" you may ask.

The portal has default settings for the Polls portlet in $PORTAL_ROOT_HOME/WEB-INF/liferay-portlet.xml:

```xml
<control-panel-entry-category>site_administration.content</control-panel-entry-category>
<control-panel-entry-weight>10.0</control-panel-entry-weight>
```

The preceding code shows that the Polls portlet will appear in the Content category via the control-panel-entry-category tag and at position 10 via the control-panel-entry-weight tag. Meanwhile, the polls content can be backed up as an LAR file via the portlet-data-handler-class tag.

Features of Polls portlets

As you can see, we can summarize the following features of the Polls portlet:

- The Polls portlet manages (add, delete, and update) questions with multiple choices
- The Polls portlet creates a graph showing the votes automatically
- The Polls portlet expires the poll automatically
- There are fine-grained permissions and role-based access control for polls
- In the Polls portlet, each user can vote on a specific question only once
- In the Polls portlet, you can export and import data, for example, questions, votes, and permissions, for a given group
- The Polls portlet scopes polls into different groups (sites and organizations) and portal instances
The Polls Display portlet

Do you want to display a specific poll's results in the intranet? The Polls Display portlet can be a useful tool. The Polls Display portlet allows users to vote for a specific poll's questions and see the results of votes. Note that the question must be created from the Polls portlet in the Control Panel under the Content category. Refer to the following screenshot for further details:

As shown in the preceding screenshot, we're going to put votes on the question "Will Liferay will be the best portal solution in this year 2015?" in a page of the Guest public pages. Afterwards, users can vote on this question and view the vote results.

As an administrator, you can create the "Polls" page in the site public pages first and then add the Polls Display portlet by clicking on Add | Application... under the dock bar menu. Afterwards, you can select different poll questions by simply clicking on the Gear (icon) | Configuration icon in the upper-right corner of the Polls Display portlet. Then, you can select a title from a list of poll titles to be published in the website by selecting Setup.

Of course, you can archive the current settings by selecting the Setup | Archive Restore setup link. Furthermore, you can configure permissions if you have proper access rights by selecting the Permissions tab and setting up sharing by selecting the Sharing tab.

In this example, you can select the question "Do you plan to buy a Liferay book next month?" under Gear (icon) | configuration | Setup | Question. Then, you can click on the Save button when you are ready.
When a user such as "Lotti Stein", as a member of the site, signs in and views the page "Polls", she would see the vote page with a button "Vote" and a set of selections with radio buttons, such as "yes" and "no", first. After choosing an answer and clicking on the Vote button, she would be able to see the vote results.

**Setting properties for the Poll Display portlet**

As the Poll Display portlet is instanceable, you can add more than one Polls Display portlet in a given page, while there is only one Polls portlet in the Content category of Control Panel. Why are they different? The Polls Display portlet was specified as being instanceable in $PORTAL_ROOT_HOME/WEB-INF/liferay-portlet.xml, as follows:

```
<configuration-action-class>com.liferay.portal.kernel.portlet.DefaultConfigurationAction</configuration-action-class>
<instanceable>true</instanceable>
```

The preceding code sets the instanceable value to true, that is, the Polls Display portlet can appear multiple times on a page. Of course, you can set it to false so that the portlet can only appear once on a page. The default value is false. The Polls portlet doesn't have the aforementioned settings, thus it uses the default value—the Polls portlet can only appear once on a page.

In addition, the preceding code shows that the configuration-action-class tag allows users to configure the portlet at runtime. This is the reason that the Polls Display portlet has the capabilities to be configured at runtime. If the tag configuration-action-class isn't specified in the portlet configuration, then there would be no configuration mode. As you can see, the Polls portlet doesn't have this setting. Therefore, it uses the default value—the Polls portlet doesn't have the Setup tab under Gear (icon) | Configuration.

**Features of the Polls Display portlet**

As you can see, the Polls Display portlet has the following features:

- The portlet can easily configure the questions and change the question to be displayed.
- The portlet is instanceable, that is, the portlet can appear multiple times on a page. Therefore, you can publish more and more questions on a page with multiple portlet instances.
- The portlet allows you to publish questions across groups—for example, the default site and Shared Global.
- One user can only vote once for a given question.
Assigning permissions

As stated previously, upon logging in as a site administrator of Palm Tree and clicking Admin | Content, you will see Polls under the Content category of Site Administrator Panel. As mentioned earlier, the user Lotti Stein is also a member of the Palm Tree site. Log in as Lotti Stein and go to Site Administrator Panel. You will see that Polls under the category is invisible.

Permission for Polls can be assigned under Site Administration | Content | Polls.

For the Polls Display portlet, permissions can be set under Site Administration | Application | Polls Display.

To set the permission entitlements for Polls, the portal administrator needs to define permissions in roles. Under the User section, click on Roles in Control Panel and locate MB Topic Admin. Select define permissions from the Action button beside MB Topic Admin. Search for Polls. You will be able to see the different permission entitlements for Polls.

Moreover, each has a different set of permission levels:

- **Site Administration | Content | Polls**: General Permissions, Resource Permissions (Poll Questions, Polls Question)
- **Site Administration | Application | Polls Display**: Application Permissions, Resource Permissions (Poll Questions, Polls Question)

Let's discuss each of them one by one in detail.

**Poll Questions**

You can set permission entitlements for the Poll Questions for users to be able to use Add Question and Permissions for specific roles, as shown in the following screenshot:

![Poll Questions Table]

*Figure 5.36: Site content permissions on Polls*
Site Content permissions are effected on the content of the portlet. If the user is provided with Add Question and Permission, they will be able to add questions and assign permissions to other users. Refer to the preceding screenshot for further details:

**Polls Question**

The Polls Question permission entitlements allow users to perform different actions on Polls Questions, such as Add Vote, Delete, Permissions, Update, and View. Refer to the following screenshot for further details:

![Polls Question Permissions](image)

Figure 5.37: Site content permissions on Polls Question

As a user at the Palm Tree Publications enterprise, such as Lotti Stein, you have proper permissions to use **View** and **Add Vote** on the question "**Will Liferay be the best portal solution in this year 2015?**". However, you do not have permissions such as **Update** and **Delete**.

As you can see, as a site member, Lotti Stein only has the permissions to use **View** and **Add Vote** on the question.

As an administrator, you may need to set up the user "Lotti Stein" to have permissions to use **View**, **Add Vote**, **Delete**, and **Update** on the question "Will Liferay be the best portal solution in this year 2015?". Let's do it by following these steps.

1. Log in as a site administrator, say "Palm Tree".
2. Locate the question "**Will Liferay be the best portal solution in this year 2015?**".
3. Click on the **Permissions** button from the **Actions** menu next to the question.
4. Select the **Delete** and **Update** functions under the "**MB Topic Admin**" role.
5. Click on the **Save** button.
From now onwards, as a member of "MB Topic Admin", "Lotti Stein" finally has permissions to use View, Add Vote, Update, and Delete on the question "Will Liferay be the best portal solution in this year 2015?". Try to log in as "Lotti Stein" and you will see the Actions menu with the Edit and Delete icons next to the question.

As stated earlier, we have added the Delete and Update permissions on an individual question. Now, we’re going add the Delete and Update permissions on questions in the following scopes:

- All questions in a site, such as Palm Tree site.
- All questions in a portal instance, such as the current portal instance.

"How to implement these use cases?", you may ask. For all questions in a site, you will be able to assign permissions in the Site Administration panel through the custom site role (or Site Member) for Site pages, or custom organization role (or Organization Member) for organization pages. For all questions in a portal instance, you will be able to assign permissions in the Site Administration panel through custom regular roles. The following is a sample process—assigning Delete and Update permissions on questions in the current portal instance:

1. Log in as a portal admin.
2. Click on Roles under the User category of Control Panel first.
3. Then, locate a role, say "MB Topic Admin".
4. Then, click on the Define Permissions icon from Actions to the right-hand side of the role.
5. Click on the Content | Polls link under Add Permissions and select the Delete and Update checkboxes under Polls Questions.
6. Click on the Save button.
Polls | General Permissions
Access to Site Administration Panel Permission on Poll has the following permission on the Poll portlet. For further details, refer the following screenshot:

![General Permissions](image)

Figure 5.38: Site content permission on General Permissions

Site Administration | Applications | Polls Display | Application Permissions
The Site Application permission on the Poll Display portlet provides the following access to the user. You can assign MB Topic Admin for the Add to page permission. So, Lotti will be able to add the portlet on the page. Refer to the following screenshot:

![Application Permissions](image)

Figure 5.39: Site Application Permissions on the Polls Display portlet

Using polls effectively
Generally speaking, users (who have proper permissions) or administrators can create multiple-choice polls that keep track of votes and display results on the page in the Polls portlet. On the one hand, the Polls portlet manages many separate polls. On the other hand, a separate portlet, such as the Polls Display portlet can be configured to display a specific poll’s results.
Understanding Wikis, Dynamic Data Lists, and Polls

Actually, the Polls portlet acts as a voting application in order to take public opinion. It provides users with scientifically sampled surveys to assess public opinion. Meanwhile, it effectively uses the portal’s customization and personalization features. Furthermore, it also allows an end user to customize the results that will be displayed.

As poll administrators, you can easily add and delete poll topics. You can customize portlets by changing the result title, reordering the poll options, and specifying whether the user can select multiple options.

As shown in following screenshot, polls are made up of questions. Thus, polls will have many questions associated with them. Each question must have two or more choices. In other words, a question would have at least two or more choices associated with it. In turn, each choice may have many votes associated with it. Note that a given user on a specific question can have at the most one vote.

![Polls structure](image)

**Figure 5.40: Polls structure**

**Understanding Polls versus surveys**

In theory, polls are scheduled to open and close at a given time. As poll administrators, you can view previous poll results if you want to make use of this information for your statistical analysis. At the same time, you can configure the portlet instance to determine what poll is to be shown in the portlet.

In a word, there are differences between surveys and polls. A survey is a multiple-page survey questionnaire, whereas a poll is a one-page questionnaire and is replaced by poll results after voting. Either by way of multiple choices or by text, polls consist of straightforward lists related to questions and potential responses. When information-gathering requirements are simple and you don't require the identification of the respondents, then you could use polls. Otherwise, you should use surveys.
Understanding Polls in scope

Considering the Portal-Group-Page-Content pattern, the content questions of the Polls portlet could be scoped into a group, for example, all pages, including both private pages and public pages by default. The content questions of the Polls portlet in the Shared Global group would be scoped into the portal instance. This would be the current portal instance—the content questions of the Polls portlet in the Shared Global group would be visible across all groups in the current portal instance.

As you can see, one of the most powerful characteristics of the Polls Display portlet is the fact that when they are added to different groups, they act as completely independent portlets, each with their own default group. By default, the Polls Display portlet is scoped into a group, that is, when one or more Polls Display portlets are added to a group of either public or private pages, they act as completely identical portlets but with their own portlet preferences, for example, Gear (icon) | Configuration | Setup.

When the Polls Display portlet is added to a page, for example, "Polls" of the Guest site, it will use the default scope—the group Guest. If you add the Polls Display portlet to a second page, let's say Welcome, it will show the same questions as those shown in the first page of the Guest group. When the Polls Display portlet is added to a page, it will immediately get scoped into the group to which the current page belongs.

Obviously, the Polls Display portlet is scoped into the Guest group when it is added to any of the pages of this group. You don't have the flexibility to switch groups in this case. However, you can solve this limitation through Control Panel. In Control Panel, you are able to switch the content of the Polls portlet between different groups. How do you implement it? You will be able to do it by following these steps:

1. Go to Control Panel under the dock bar menu.
2. Locate Polls under the Content category and click on Polls. You will see the same questions because, by default, the content of the Polls portlet is scoped to the Guest group.
3. Switch groups by selecting different groups from the drop-down menu.
Using Polls through JSON services

The portal provides services that allow invoking its methods directly through HTTP using JavaScript Object Notation (JSON) as a data serialization mechanism. The JSON API is automatically generated by Service Builder from a remote service interface. Of course, you can use polls through JSON services.

In general, you can use any HTTP client and JSON services to access the service. Alternatively, you can use JavaScript plus Velocity templates to access the JSON Service API. The following is an example of using JavaScript plus Velocity templates:

```javascript
<script type="text/javascript">
Liferay.Service.Polls = {
    servicePackage: "com.liferay.portlet.polls.service."
};
// ignore details
</script>
```

As shown in the preceding code, we used the JSON API (for example, com.liferay.portlet.polls.service) and Velocity templates (for example, $poll) to form JavaScript functions: vote and add Vote. You may refer to the JavaScript service.js in $PORTAL_ROOT_HOME/html/js/liferay. Of course, you can use the preceding code with article templates for different purposes.

In addition, you may need to add polls as a type of Web Content Structure, just as that of Image Gallery images and Document and Media documents. Moreover, you can build dynamic articles with polls.

Summary

This chapter introduced you to adding and managing (view, update and delete) nodes of wikis, adding pages at the nodes in wikis, and managing (view, update, delete, and search) the pages for a given node in wikis. We also saw how you can use permissions of the Wiki portlet and permissions on nodes and how to publish wiki articles in the intranet first. Then, it introduced you to how to configure polls and displaying surveys in order to assess public opinion. In addition, it briefly introduced you to how a Dynamic Data List will help the user to create Forms without a single line of code. This chapter has taught you how you can convert the document using OpenOffice and make use of it in different places. We learned about Polls, which allows you to set up polls in your enterprise intranet portal for your employees. It also covered all the possible configurations and permissions for the Polls portlet.

In the next chapter, we're going to introduce blogs, RSS, and the WYSIWYG editor.
In the intranet website, bookpub.com of the Palm Tree Publications enterprise, it would be nice to let small teams work together on specific projects, share files and Blogs about project processes, use WYSIWYG editors to create or update files and Blogs, and also employ RSS feeds. The Blogs portlet provides a straightforward Blogs solution with features such as RSS support, user and guest comments, browse able categories, tags and labels, and an entry-rating system. The RSS portlet with subscription provides the ability to frequently read RSS feeds from within the portal framework. At the same time, *What You See Is What You Get (WYSIWYG)* editors provide the ability to edit web content, including Blog content. Less technical people can use WYSIWYG editors without sifting through complex code.

This chapter will first introduce you to working with WYSIWYG editors, how to build Blog content with WYSIWYG editors, and how to configure different WYSIWYG editors. We will discuss how to work with RSS and related portlets as well as how to implement them for different requirements. It will talk about Blogs—how to customize and publish Blogs. Finally, it will talk about Social Networking and how to implement it in the portal.

By the end of this chapter, you will have learned how to:

- Use WYSIWYG editors extensively and configure WYSIWYG editors.
- Use RSS, including the RSS portlet, the Alert portlet, and the Announcement portlet.
- Work with blogs, manage (add, update, and delete) entries on blogs. Add comments and ratings on blog entries.
- Assign permissions on the Blogs portlet and blog entries.
• Publish blogs using the Recent Bloggers portlet and the Blogs Aggregator portlet.
• Create the Social Media portal using Liferay.

Exploring WYSIWYG editors

WYSIWYG is an acronym for What You See Is What You Get. The WYSIWYG editor helps users to create content with text and graphics using an interface that allows the user to view something very similar to the end result of the document that is being created.

The portal integrates CKEditor as the default HTML text editor. Of course, it is possible that as an administrator, you can integrate other WYSIWYG editors into the portal. Here, we will first use CKEditor as an example in order to build the contents of our portal.

Liferay has used WYSIWYG everywhere, including web content, blogs, Message Boards, and so on, to make users work easily.

CKEditor provide us with a lot of features, such as the source for HTML and image access from the image portal.

Figure 6.1: A WYSIWYG editor
CKEditor is web-based HTML text editor with powerful formatting capabilities. It brings to the Web much of the power of desktop editors, such as MS Word. Moreover, it is the most used rich HTML editor on the Web. It's also lightweight and doesn't require any kind of installation on the client's computer. In the year 2009, this product was renamed to CKEditor. Refer to http://ckeditor.com for more details.

Let's consider the following use cases of the WYSIWYG editor:

- Upgrade CKEditor to the latest version.
- Use general functions on text, namely font, size, alignment, color, background color, copy, paste, list, and so on. You would be able to use them easily.
- Insert images.
- Insert links.
- Insert flash, tables, smileys, and special characters.
- Edit a source directly.
- Customize WYSIWYG editors.

**Upgrading CKEditor**

First of all, let's upgrade the WYSIWYG text editor (CKEditor) to the latest version. By default, the portal has bundled CKEditor with a specific version. The version of CKEditor that comes along with the Liferay bundle might not be the latest version. Let's upgrade CKEditor to the latest version by following these steps:

1. Download the latest version of CKEditor from http://ckeditor.com. In my example, I have used the builder at http://ckeditor.com/builder and created my own editor with the Office 2013 skin.
2. Rename the editor folder under the $PORTAL_ROOT_HOME/html/js to editor.backup folder.
3. Unzip the ZIP file to the $PORTAL_ROOT_HOME/html/js/editor folder.
4. Restart the server. That's it! From now onwards, you can enjoy the latest version of CKEditor.

Note that you can use SDK plugins and do this in the ext plugin. This tutorial works only for CKEditor 2, and with CKEditor 4.2 and higher.

End user features

CKEditor isn't only functional, flexible, and fast, but it's also innovative, smart, and user friendly. The following are end user features, but it's not limited to them.

The formatting features include:

- **Basic and advanced styling**: This feature allows rich styles under the Control tab
- **Real block-quoting**: This feature properly quotes text using the appropriate and semantics-aware `<blockquote>` tag
- **Colors**: This feature makes it easy to apply colors to text, which is a matter of a few clicks with the color selector
- **Advanced paste from Word**: This makes it easy to convert these texts using the powerful Paste from Word feature
• **Advanced linking**: This builds advanced links that can open popups, links to anchors, e-mails, and any kind of web resource

• **E-mail linking**: This makes it easy to insert the desired e-mail address—even the message subject and text

The user interface features include:

• **Visual link anchors**: You can use this feature by inserting page anchors so that other pages (or even the same page) can link to them, thus positioning the reader in the right place

• **Maximize**: With a single click, you can fill the entire space available in the page, and with another click, it returns to its original size

• **Visible Blocks**: With this feature, you can outline every single block of text, making it easy to control the semantics and the quality of the edited content

• **Resizable**: Through a simple drag operation, this makes it possible to have the perfect fit

• **Right-to-left interface**: Renders from right to left to make the end users feel at home

• **Elements selector**: Showing the hierarchy of HTML tags around the current cursor position makes it easy to manage them

• **Find and Replace**: Finding words in the text is simple and effective using this feature, and replacing words is also easy, including massive replacement operations

The rich content features of CKEditor include the following:

• **Images**: This helps to insert images into the content and is easily configurable

• **Flash content**: This enables inserting flashes on pages and easily controlling the playback features of Flash movies

• **Easy tables**: The creation of tables plays well with accessibility and designing them presents their contents in a better way

• **Smiles**: This feature comes with a set of exclusively designed smiley graphics that can be freely and easily used to display smileys

• **Print breaks**: This feature precisely controls the printing breakpoints inside the contents

• **Templates**: This makes pieces of HTML reusable again and again

• **Form creation tools**: This enables bringing all necessary tools to proper "create and manage" forms and fields
The usability features include:

- **Interface usability**: This feature makes it intuitive to be understood and used by bringing the best editing experience to the hands of our end users.

- **Strong accessibility**: This brings about compliance with worldwide accessibility standards, such as the W3C, WCAG, and the US Section 508.

- **Spellcheck as you type**: This brings a zero installation spellcheck based on the quality spellchecking services provided by SpellChecker.net.

- **Keyboard navigable**: The keyboard is totally keyboard navigable, which means that you don't need a mouse to use its features, and you will never be limited as a result of it.

- **Tab-key friendly**: Using the Tab key to navigate through pages, this special form is quite common and intuitive. CKEditor respects it. It does not interfere in the way users would expect pages to behave and makes navigation very natural.

- **Intuitive context menu**: Context menus are easy and intuitive ways to add functionality to applications.

- **Safely undo**: Every single action can be safely reverted, which guarantees that you'll never break things or lose your text.

### Inserting images from CKEditor

You can insert an image as an internal image (from the document and image libraries) or an external image (a URL outside of the portal). For example, imagine that you need to insert an image using the `http://cdn.www.liferay.com/osb-community-theme/images/custom/heading.png` URL in the entry **Welcome To Liferay Portal** web content title. Let's do it by following these steps:

1. Click on the **Edit** icon below the **Welcome To Liferay Portal** title of some web content.
2. Locate the position where you want to insert an image.
3. Click on the **Image** icon in CKEditor.
4. For the external image, enter the `https://cdn.lfrs.sl/www.liferay.com/osb-community-theme/images/custom/heading.png` URL and add the other properties, such as width, height, and alignment. Refer to the following screenshot.
5. Click on the **OK** button.
The following screenshot illustrates how to include the image through CKEditor:


**Figure 6.3: CKEditor image URL**

As shown in the preceding screenshot, you can configure the following items related to **Image Info**:

- **URL**: This is the URL of images
- **Alternative Text**: This is about using the alt setting
- **Width**: These are the dimensions in terms of the width of the image
- **Height**: These are the dimensions in terms of the height of the image
- **Border**: This removes the visible border around images
- **HSpace**: This is the horizontal space between the image and surrounding text
- **VSpace**: This is the vertical space between the image and surrounding text
- **Alignment**: This shows whether the image is left-aligned or right-aligned

The size of the dimensions (**Height** and **Width**) of the image can be reset, and the ratio of these dimensions of the image can be locked. You can find the two icons next to **Width** and **Height**—namely, **Lock Ratio** and **Reset Size**.
Of course, you can insert an image as an internal image (from the image gallery). You can do it by following these steps:

1. Click on the Edit icon appearing below the Welcome To Liferay Portal title of the web content.
2. Select the position where you want to insert an image.
3. Click on the Image icon in the WYSIWYG editor.
4. Click on the Browse Server (internal image) button.
5. Click on a folder, say Palm Tree.
6. Click on Create New Folder to add the Images folder under the current folder.

   Any folder and image added here will be placed in the document and image library. The document and image library provides a centralized repository for images to be stored and given a unique URL.

7. Type the name of the new folder Images and click on the OK button.
8. Navigate to the Images folder.
9. Click on the Choose File button to select an image, muppets.png, from your local machine.
10. Click on the Upload button to add the image to the folder.
11. Click on the muppets.png image and click on the OK button to add the image to the document.
12. Click on the Save button to save the updates.

In addition, you can insert an image, flash, or document link from the Alfresco repository. It is called full RESTful integration between Liferay and Alfresco. In this case, Alfresco is used as a repository for Liferay.

As you can see, you can select an existing image from the image gallery or create a folder, upload an image, and select the newly uploaded images.

**Configuring CKEditor**

The fckconfig.jsp JSP file provides an integration of CKEditor and the portal.
First, its customized toolbar sets liferay (for Wiki pages, blog entries, and so on), liferay-article (for web content), edit-in-place, and e-mail at $PORTAL_ROOT_HOME/html/js/editor/fckeditor/fckconfig.jsp. For example, the liferay toolbar set has been specified as follows:

```javascript
FCKConfig.ToolbarSets["liferay"] = [
    ['Style', 'FontSize', '-', 'TextColor', 'BGColor'],
    ['Bold', 'Italic', 'Underline', 'StrikeThrough'],
    ['Subscript', 'Superscript'],
    '/',
    ['Undo', 'Redo', '-', 'Cut', 'Copy', 'Paste', 'PasteText',
     'PasteWord', '-', 'SelectAll', 'RemoveFormat'],
    ['Find', 'Replace', 'SpellCheck'],
    ['OrderedList', 'UnorderedList', '-', 'Outdent', 'Indent'],
    ['JustifyLeft', 'JustifyCenter', 'JustifyRight', 'JustifyFull'],
    '/',
    ['Source'],
    ['Link', 'Unlink', 'Anchor'],
    ['Image', 'Flash', 'Table', '-', 'Smiley', 'SpecialChar']
];
```

As shown in the preceding code, the style and font size are grouped as one tab, and the image, flash, and table are grouped as another tab.

Then, it sets the CSS and links it to the themes. The following is some sample code:

```javascript
String cssPath = ParamUtil.getString(request, "cssPath");
String cssClasses = ParamUtil.getString(request, "cssClasses");
FCKConfig.BodyClass = 'html-editor <%= cssClasses %>' ;
FCKConfig.CustomStyles = {};
FCKConfig.StylesXmlPath = FCKConfig.EditorPath + 'fckstyles.xml' ;
FCKConfig.EditorAreaCSS = '<%= HtmlUtil.escape(cssPath) %>/main.css' ;
```

Most importantly, it specifies the image browser URL as follows:

```javascript
long plid = ParamUtil.getLong(request, "p_l_id");
String mainPath = ParamUtil.getString(request, "p_main_path");
String doAsUserId = ParamUtil.getString(request, "doAsUserId");
String connectorURL = HttpUtil.encodeURL(mainPath +
    "/portal/fckeditor?p_l_id=" + plid + 
    "&p_p_id=" +
    HttpUtil.encodeURL(portletId) + 
    "&doAsUserId=" +
    HttpUtil.encodeURL(doAsUserId) + 
    "&doAsGroupId=" +
    HttpUtil.encodeURL(doAsGroupId));
```
Blogs, WYSIWYG Editors, and Social Networking

Inserting links to content

Links can be internal and external. You can insert internal links and external links into content, such as blog entries. For example, you are going to insert a link with a URL in the Welcome To Liferay Portal entry. Let's do it by following these steps:

1. In the WYSIWIG editor text area, locate the position where you want to insert a link.
2. Input some text, for example, Liferay Portal 6.2 Portal System Development has very cool features, and then select the text that you want to make a link for.
3. Click on the Link button in the WYSIWYG editor:

![Figure 6.4: CKEditor adding link](image)

4. Now, in the pop-up link window, input the URL for the external link.
5. Finally, click on the OK button.

As shown in the preceding screenshot, you can configure the following items related to Link Info:

- **Link Type**: This includes the URL, link to anchor in this page, and e-mail
- **Protocol**: This can be http://, https://, ftp://, news://, or <other>
- **URL**: This is the URL of the links

As you can see, external links refer to any links outside of the portal where link types would be a URL, link to the anchor in the text, and e-mail. Protocols can be http, https, news, ftp, and <other>. Besides the Link Info tab, you can also use the functions from the Target and Advanced tabs.
The internal links refer to any links in the portal, for example, links to images in the image or documents in the document and image library and links to pages of the current group. In short, there are two types of resources related to internal links: document and page.

**Linking text to documents**

As previously mentioned, you may need to link to a document. To link text to a document, follow these steps:

1. In the WYSIWIG editor text area, locate the position where you want to insert a link.
2. Select text, such as *Liferay Portal 6.1 Portal System Development has very cool features.*
3. Click on the **Link** button in the WYSIWYG editor.
4. Click on the **Browse Server** button in the **Link Info** tab, that is, internal link.
5. In the **Resource Type** menu, select **Document**—note that the default value of the resource type is **Document**.
6. Select the document from its respective folder. If the document is not uploaded in the portal, then you may have to upload the document and link it.
7. Click on the **Save** button to save the updates.

Any folders and documents that are added here will be placed in the document and image library. The document and image library provides a centralized repository where documents and images can be stored and given a unique URL.

**Linking text to pages**

We have discussed how to link text to documents. However, you may need to link text to a page, for example, `web/guest/home`. We can do it by following these steps:

1. In the WYSIWIG editor text area, locate the position where you want to insert a link.
2. Select text, such as *Liferay Portal 6.1 Portal System Development has very cool features.*
3. Click on the **Link** button in the WYSIWYG editor.
4. Click on the **Browse Server** button in the **Link Info** tab, that is, **internal link**.
5. Select the group, say **Palm Tree**, in which the page is located.
6. Click on the page that you want to link the selected text to, for example, `/web/guest/home`.
7. Click on **OK** to link the page with the selected text.

As you can see, the value that links text to a page would be something similar to `/web/ guest/home` if the link type is URL.

## Configuring resource types

As mentioned previously, there are two resource types for links—document and page. The default resource type is document.

In the file `$PORTAL_ROOT_HOME/html/js/editor/fckeditor/editor/ filemanager/browser/liferay/frmresourcetype.html`, we overrode the value of resource types as follows:

```javascript
var defaultTypes = [
    ['Document','Document'],
    ['Page','Page'],
    ['Attachment', 'Attachment'],
    ['Audio', 'Audio'],
    ['Video', 'Video']
];
```

The preceding code shows that there would be two resource types, namely, Document and Page. Similarly, in the `$PORTAL_ROOT_HOME/html/js/editor/ fckeditor/editor/ filemanager/browser/liferay/browser.html` file, we overrode the value of the default resource type as follows:

```javascript
if( oConnector.ShowAllTypes )
oConnector.ResourceType = 'Document';
```

The preceding code sets the default resource type to Document.

Most importantly, the configuration file `$PORTAL_ROOT_HOME/html/js/editor/ fckeditor/fckconfig.jsp` specifies the link browser URL as follows:

```javascript
FCKConfig.LinkBrowserURL = FCKConfig.BasePath +
    "filemanager/browser/liferay/browser.html?Connector=<%= HtmlUtil.escapeJS(connectorURL) %>">
```

---

---
Note that in WYSIWYG (CKEditor) editor, we can insert flash (.SWF) files, tables, smileys, and special characters too.

**Understanding RSS**

As an administrator, you may need to include formatted data (news) from external **Really Simple Syndication (RSS)** feeds. For example, you’re going to add New York Times news feeds (for example, http://partners.userland.com/nytRss/technology.xml), BBC news feeds (for example, http://feeds.bbci.co.uk/news/technology/rss.xml), and Yahoo! news feeds (http://news.yahoo.com/rss/tech) in the RSS page of the Palm Tree site. Whenever an RSS XML file is updated on the remote site, the page will reflect those updates on the next portal page reload, as shown in the following screenshot:

![Figure 6.5: The RSS portlet](image)

Figure 6.5: The RSS portlet
Let's add the RSS portlet to the **RSS** page first by following these steps:

1. Add a page called RSS in the Palm Tree site's public pages by clicking on **Add | Page** under the dock bar menu.
2. Add the RSS portlet in the RSS page of Palm Tree where you want to manage RSS news by clicking on **Add | Applications** under the dock bar menu.

**The RSS portlet**

How do we get RSS news? You need to configure the RSS portlet (portlet ID 39) by following these steps:

1. To set the feeds that you want to display, click on **Gear (icon) | Configuration** first in the top-right corner of the RSS portlet.
2. By default, the **Setup** tab is selected.
3. To add a feed, first click on the **Add** icon and then enter a title, say Yahoo, and a URL, say `http://news.yahoo.com/rss/tech`.
4. To add another feed, click on the **Add** icon first and then enter a title, for example, BBC, and a URL, say `http://feeds.bbci.co.uk/news/technology/rss.xml`.
5. To add another feed, click on the **Add** icon first and then enter a title, for example, New York Times, and a URL such as `http://partners.userland.com/nytRss/technology.xml`.
6. To delete a feed, locate the feed first and then click on the **Delete** icon on the right-hand side of the feed.

7. To edit a feed, locate the feed, click on the title and/or URL, and then change the title and URL to what you want.

8. Configure the following items as expected. Here, we use the default settings, as shown in the next screenshot.

9. Click on the **Save** button to save the changes.
Of course, you can use other news feeds. In short, to add a feed, simply click on the **Add** icon first and then input the title and the URL. In order to remove a feed, first locate the feed and then click on the **Delete** icon.

As you can see, there are three different news feed URLs by default, three items per channel, and three entries per feed. Moreover, the RSS portlet is configurable and instanceable; you can add multiple RSS portlets in a page.

## Configuring RSS

The RSS portlet was specified as being instanceable and configurable as follows in `$PORTAL_ROOT_HOME/WEB-INF/liferay-portlet.xml`:

```xml
<configuration-action-class> com.liferay.portlet.rss.action.ConfigurationActionImpl </configuration-action-class>
<instanceable>true</instanceable>
```

The preceding code shows that the RSS portlet is configurable via the `configuration-action-class` tag and `instanceable` via the `instanceable` tag.

In addition, the RSS portlet has a set of preferences specified in `$PORTAL_ROOT_HOME/WEB-INF/portlet-custom.xml` as follows:

```xml
<portlet-preferences>
  <preference>
    <name>entriesPerFeed</name>
    <value>4</value>
  </preference>
  <preference>
    <name>urls</name>
    <value>http://www.liferay.com/community/blogs/-/blogs_stream/community/rss</value>
    <value>http://rss.news.yahoo.com/rss/tech</value>
    <value>http://partners.userland.com/nytRss/technology.xml</value>
  </preference>
  <preferences-validator>com.liferay.portlet.rss.RSSPreferencesValidator</preferences-validator>
</portlet-preferences>
```

As shown in the preceding code, the portlet preference URL has three values. On the other hand, the portlet preference `items-per-channel` has the value 4. This is the main reason that there are three news feed URLs.
Understanding announcements and alerts

Announcements and Alerts are two separate portlets that are responsible for broadcasting messages to a list of users within a scope. Essentially, these portlets provide a mass messaging engine and one-way messaging. All Announcement and/or Alert entries are tracked so that they can be read by each individual user and each user can individually hide an entry.

Managing entries

In both the Announcements and Alerts portlets, entries are manageable. If you are going to add an entry in the Announcements portlet on the RSS page of the Palm Tree site, you would be able to do it as shown in the following steps and the next screenshot:

1. Add the Announcements portlet in the RSS page of the Palm Tree site where you want to manage entries.
2. Select the Manage Entries tab and select Distribution Scope; the scope would be a portal site or role similar to the following items:
   - Site: Palm Tree and other sites
   - Roles: Regular, organization, and site roles
3. Now click on Add Entry.
4. Type a title, such as Book Review, a URL, such as https://www.packtpub.com/web-development/liferay-62-intranet-portal-development-guide, and enter content, such as Liferay Portal 6.2 Systems Development.
5. Select Type from the drop-down list: General, News, and Test. We use the default value General.
6. Select Priority from the drop-down list: Normal and Important. We use the default value Normal.
7. Enter the display date and expiration date—note that the display date and the expiration date should be different.
8. Click on the Save button when you are ready.
9. You can preview the entry before saving by clicking on the **Preview** button.

Figure 6.7: New entry in Announcements
Of course, you would be able to add more entries if you have proper permissions. After adding the Book Review entry, you are able to view and manage entries, as shown in the following screenshot. You can update an entry by clicking on the Edit icon next to the entry, or you can delete an entry by clicking on the Delete icon next to the entry. In addition, you could mark an entry as read by clicking on the Mark as Read link next to the entry. Afterwards, the Mark as Read link will be changed to Show.

![Figure 6.8: The Announcements portlet](image)

In addition, you would be able to configure remote delivery of alerts and announcements. As shown in the next screenshot, remote delivery would be enabled through e-mail and SMS. Each user will have an opportunity to individually configure delivery in the user profile for each configured "type" of announcement entry. Normally, by going to My Account | Miscellaneous | Announcements, you would be able to configure your own remote delivery of alerts and announcements.

As a normal user, if you have proper permissions, you would be able to configure other users' remote delivery of alerts and announcements. The following are simple steps to show you how it’s done:

1. Click on Admin | Control Panel under the dock bar menu.
2. Select Users and Organizations under the Users category of Control Panel.
3. Locate a user, say "Lotti Stein", and click on the Edit icon of the Actions menu next to the user.
4. Go to Miscellaneous | Announcements and you would be able to configure the user's remote delivery of alerts and announcements.

Figure 6.9: Announcements sitting in Users and Organizations

**Features of the Announcements portlet**

The following are the main features of the Announcements portlet:

- First, there is the feature of being configurable and supporting an unlimited number of announcement types.
- Then, there is the delivery to scopes, including general (that is, portal instance), communities, and role.
- The portlet has the feature of delivery mechanisms include e-mail, SMS, and website. Note that website delivery is achieved simply by adding the portlet to any page accessible to the user.
- Scheduled delivery — each entry has a display date and an expiration date.
- Readable tracking — each entry has a website delivery that tracks the timestamped read status per user.
- There is subscription control per user and per announcement type.
- Broadcast control of announcements is another feature.
Configuring the Announcements portlet

The portal sets the following items for e-mail notification announcements by default in portal.properties:

- announcements.email.from.name=
- announcements.email.from.address=
- announcements.email.to.name=
- announcements.email.to.address=noreply@liferay.com

As shown in the preceding code, e-mail notification settings are configured. The e-mail from name and the e-mail from address can be configured. The e-mail to name and the e-mail to address is noreply@liferay.com, which you can configure. You will definitely be able to override these settings in portal-ext.properties.

In addition, the portal has some specified types of announcements as default settings, as shown in the following lines in portal.properties:

- announcements.entry.types=general,news,test
- announcements.entry.check.interval=15

As shown in the preceding code, the default types of announcement entries are general, news, and test. The announcements.entry.types property sets the list of announcement types, while the announcements.entry.check.interval property sets the interval at which Check-Entry-Job will run. The value 15 is set in 1-minute increments.

Exploring blogs

The Blogs portlet includes full WYSIWYG editing capability and publication date, RSS support, threaded user and guest comments, tags and labels, social bookmarking links, e-mail notifications of blog replies, and an entry rating system. In order to let small teams work on specific projects and share files and blogs about project processes, we should use the Blogs portlet at the Palm Tree site member.

Let's look at an example on the Blogs portlet. As an administrator of the enterprise Palm Tree Publications, create a page called Blogs at the Palm Tree site, and then add the Blogs portlet (portlet ID 33) in the Blogs page. Then, you are ready to create blog entries named Liferay Portal Best Open Source Portal and How to create best Intranet portal.
Adding entries

First of all, we need to create an entry called Liferay Portal Best Open Source Portal. Let’s create the entry, as shown in the following screenshot.

1. On the Blogs portlet, click on the Add Blog Entry button.
2. Input a title, say Liferay Portal Best Open Source Portal, which can be duplicated.
3. Input a display date; the default date and time are the current date and time respectively.
4. Input content—text, graphics, and any links using the WYSIWYG editor.
5. Enabling the Allow Pingbacks checkbox will automatically notify the users when a link has been created to a person’s blog post from an external website, allowing a reciprocal link to that website to be created.
6. Check the Allow Trackbacks checkbox. Note that in order to allow trackbacks, you must also ensure that the entry’s guest view permission is enabled.
7. Input an e-mail address for Trackbacks to Send; here, we use the default settings.
8. Set Permissions; by default, it’s anyone (Guest Role). In order to configure additional permissions, click on More Options. Here, we just use the default settings.
9. Input the Abstracts description on the content. Even you can upload small images with respect to content.
10. Click Categorization, and select proper categories by clicking on the Select Categories button. Input the proper Tags; if you need help, you can click on the Suggestions button.
11. You can set the related assets for the blog. Related assets can be web content, Message Board messages, calendar events, wiki pages, or any documents.
12. Save inputs by clicking on the Publish button or the Save Draft button. Only published blogs will be visible to users.
The following screenshot illustrates the new blog entry:

Figure 6.10: Adding a blog entry
Of course, you can create other entries as desired. After creating the entry called How to create best Intranet portal, we can view entries, as shown in the following screenshot:

![Figure 6.11: The blog entry view](image)

Managing entries
After adding entries, we can manage them smoothly via the Blogs portlet. Blog entry management would involve, but is not limited to, editing, removing, searching, rating, commenting, bringing RSS feeds, bringing entries into third-party blog systems, and so on.

Editing blog entries
Entries are editable. For example, let's change the title of the entry How to create best Intranet portal to Developing Enterprise Intranet with Liferay. Let's do that by following these steps:

1. Locate the entry, say How to create best Intranet portal, that you want to edit.
2. Click on the Edit icon appearing below the title How to create best Intranet portal.
3. Update the title with Developing Enterprise Intranet with Liferay.
4. Retain the values of the display date, content, categories, tags, and so on. If required, you can update them.
5. Now, publish it by clicking on the Publish button.
Note that in the edit page, you can update the title, display date, trackbacks, categories, and tags—everything except assigning permissions. In order to change permissions, you have to use functions of permission assignment.

Liferay 6.2 provides an inline editing feature for blog content. In Figure 6.11, as an administrator, you can see in the top-right corner of the content a green pencil icon. Once you click on the green pencil icon, it will allow you to edit the content inline. It will pop up the edit controls for content writing.

Removing blog entries

Entries are removable and moved to Recycle Bin. For instance, the entry Developing Enterprise Intranet with Liferay is not needed anymore. Let's delete it by following these steps:

1. Locate the entry Developing Enterprise Intranet with Liferay that you want to remove.
2. Click on the Move to the Recycle Bin icon appearing below the title Developing Enterprise Intranet with Liferay.
3. A message will appear saying The Blogs Entry Developing Enterprise Intranet with Liferay was moved to the Recycle Bin. with an Undo button next to it.

Note that removing an entry will remove all related comments that belong to this entry.

Searching entries

The content of entries is searchable. Let's say that, as an administrator, you want to search entries by the keyword Liferay. Let's perform a search as follows:

1. In the Blog portlet search box, input the search criterion (that is, keyword) for example, liferay.
2. Click on the Search button.

A list of entries appears with the content search too. The search displays the blog entries with their respective content. It searches within the content and highlights it.
You can search for entries using any keyword. In short, there is only one condition, that is, you need to have the proper View permission for the entries. This means that if you don't have the proper View permission for the entries, then you won't be able to view them using search.

Now, log in as "Lotti Stein", just input the search criterion liferay, and click on the button Search. You will see the entry that has the view permission to "Lotti Stein".

By default, the Blogs portlet has the guest view permission set and the site member view permission set, due to which you will be able to view all the blogs entries.

![What's happening? This is something related to permissions on the entries. Refer to the Assigning permissions section.](image)

Ratings for blog entries

You can give your own rating to any entries if you are logged in and if you have proper permissions to view them. For instance, as an administrator, you find the blog entry Liferay Portal Best Open Source Portal useful and nice and want to give your rating, for example, four stars. You simply have to click on the fourth star under Your Rating of the entry Liferay Portal Best Open Source Portal.

Each user can give their own ratings for their respective blogs entries. So, when "Lotti Stein" logs in, she can provide her own ratings to blog entries. Now, you will find the calculated average value voted by two people for same blog entry.

![Note that a guest can view the rating but can't vote; users can vote only once on a given blog entry. More interestingly, you, as a user with proper permissions, can change your vote on a specific blog entry anytime.](image)
Why does each entry have ranks? There is a taglib called `<liferay-ui:ratings>` that allows you to rate any type of content or pages in any portlet. Meanwhile, you can find the UI taglib `<liferay-ui:ratings>` at $PORTAL_ROOT_HOME/html/portlet/blogs/view_entry_content.jsp. To associate any object with ranks, all you need is its Class-Name and Primary-Key. Note that $PORTAL_ROOT_HOME represents the root folder of the portal (refer to Chapter 2, Setting Up a Home Page and Navigation Structure for the Intranet, for more details).

**RSS feeds for blog entries**

You can export blog entries as RSS feeds. Let's do it by following these steps:

1. Click on the RSS Feed ( RSS ) icon at the bottom of the entries.
2. The RSS feeds page appears on the next window. All entries are displayed with brief content in the form of XML.
3. Now, you use this XML for the feed using different applications, such as the RSS portlet.

**Flagging inappropriate content**

As you can see, you can flag the content of a Blog entry as inappropriate. For each entry, you will see a small icon of a flag that will enable a user to flag the content of a blog entry as inappropriate for a reason and warn the administrator about it.

Why does each entry have a flag? There is a taglib called `<liferay-ui:flags>` that allows you to flag any type of content or pages in any portlet. If you are interested in details, you can also find the implementation of the `<liferay-ui:flags>` flags at $PORTAL_ROOT_HOME/html/taglib/ui/flags/page.jsp. On the other hand, you can find the UI taglib `<liferay-ui:flags>` at $PORTAL_ROOT_HOME/html/portlet/blogs/view_entry_content.jsp.

**Understanding social bookmarks**

The feature of social bookmarking on blog entries is very cool because it allows the posting of entries to various popular social bookmarking sites, such as Twitter, Facebook, and Google+. Why does each entry have social bookmarks? There is a taglib called `<liferay-ui:social-bookmarks>` that allows the posting of entries to various popular social bookmarking sites. You can find the UI taglib `<liferay-ui:social-bookmarks>` at $PORTAL_ROOT_HOME/html/portlet/blogs/view_entry_content.jsp.
If you are interested in more details, you can also find the implementation of the social bookmarks `<liferay-ui:social-bookmarks>` at `$PORTAL_ROOT_HOME/html/taglib/ui/social_bookmarks/page.jsp` and the implementation of the social bookmark `<liferay-ui:social-bookmark>` at `$PORTAL_ROOT_HOME/html/taglib/ui/social_bookmark/page.jsp`.

What's happening? How can we configure social bookmarks for Blog entries? The portal has the following settings by default in `portal.properties`.

```properties
social.bookmark.types=twitter,facebook,plusone
social.bookmark.jsp[facebook]=/html/taglib/ui/social_bookmark/facebook.jsp
social.bookmark.jsp[plusone]=/html/taglib/ui/social_bookmark/plusone.jsp
social.bookmark.jsp[twitter]=/html/taglib/ui/social_bookmark/twitter.jsp
```

As shown in the preceding code, the `social.bookmark.types` property specifies the types of social bookmarks, whereas the `social.bookmark.jsp[facebook]`, `social.bookmark.jsp[plusone]`, and `social.bookmark.jsp[twitter]` properties specify the URL and title for a given bookmark using the type as a parameter. You can override these properties in `portal-ext.properties`.

### Adding comments

As stated, being an administrator, you created an entry called Liferay Portal Best Open Source Portal. Being a user of the enterprise Palm Tree Publications, "Lotti Stein" wants to review the entry and add a comment to say Nice Post!. Let's do it by following the next set of steps:

1. Log in as "Lotti Stein" and navigate to the Blog's page.
2. Locate an entry and click on the entry by title, for example, Liferay Portal Best Open Source Portal.
3. Click on the Comments link under the content of the Blog entry.
4. Under the Comments tab, click on the Be the first or Add Comment link if you want to add a new comment.
5. Input text, for example, Nice Post!.
6. Check in the checkbox subscribe me. It will subscribe you to the mail notification if anyone replies to your comments.

---

[298]
7. Click on the **Reply** button to save the input.

![Figure 6.13: Blog comments by a user](image)

As a normal user or a guest user, you can view comments from "Lotti Stein" for the entry Liferay Portal Best Open Source Portal if you have proper permissions, as shown in the following screenshot.

Other users can also comment with very simple steps:

1. Click on the title of this entry.
2. Click on the **Comments** link under the content of the Blog entry.
3. Under the **Comments** tab, click on **Add Comment** or click on the **Post Reply** link.

In addition, you can reply to a comment. You can locate the comment that you want to reply to first, and then click on the **Post Reply** icon in the bottom-left corner of the comment. Enter the comments and then click on the **Reply** button to save the inputs, or click on the **Cancel** button to cancel the changes.
Furthermore, you can edit a comment by simply clicking on the Edit icon in the bottom-left corner of the comment, and you will be able to change the body and click on the Publish button to save the changes or the Cancel button to cancel the changes.

Moreover, you can delete a comment if you have proper permissions. First, click on the Delete icon, and in the bottom-left corner of the comment, a message will appear that asks whether you want to delete this and tells you to click on OK to confirm the deletion or on Cancel to cancel the deletion.

Note that only the current comment has been deleted by the following action. The low-level comments will link to the parent comment of the current comment.

Finally, in order to go to the top of the comments, simply click on the Top button in the bottom-right corner of any comment.

Understanding comment settings

Why does each entry have comments? There is a taglib called `<liferay-ui:discussion>` that allows us to comment on any type of content or pages in any portlet. If you are interested in more details, you can also find the implementation of comments `<liferay-ui:discussion>` at `$PORTAL_ROOT_HOME/html/taglib/ui/discussion/page.jsp`.

Meanwhile, you could find the UI taglib `<liferay-ui:discussion>` at `$PORTAL_ROOT_HOME/html/portlet/blogs/view_entry.jsp`. All you need is Class-Name, Primary-Key, user-Id, subject, and other keywords of any object to associate it with comments.

Assigning permissions

We used the default settings for the Blogs portlet on the Blogs page. When you're logged in as a Palm Tree administrator, you can manage blogs. As you know, the user "Lotti Stein" is a member of Palm Tree. When Lotti logs in, she can see that there is no Add Entry button in the Blogs portlet. Furthermore, Lotti can see the entry Liferay Portal Best Open Source Portal without any action icons (such as Edit, Permissions, and Move to the Recycle Bin).
What's happening? This is something related to permissions. The permission for Blogs can be assigned under Site Administration. Under Site Administration | Content | Blogs, another one is Site Administration | Application | Blogs. Moreover, each has a different set of permission levels.

To set the permission entitlements for blogs, portal administrators need to define permissions in roles. Under the User section, click on Roles in Control Panel and locate MB Topic Admin. Select define permissions from the Action button beside MB Topic Admin. Search for Blogs. You will get the entitlement settings for blogs:

- **Site Administration | Content | Blogs**: General Permissions, Resource Permissions (Blog Entries, Blogs Entry)
- **Site Administration | Application | Blogs**: Application Permissions, Resource Permissions (Blog Entries, Blogs Entry)

Let's discuss each of them one by one in detail.

**Blog entries**

For permission entitlements, that is, Add Entry, Permissions, and Subscribe, for Blog Entries, refer the following screenshot:

![Figure 6.14: Site content permission on the blog entries](image)
Permissions on Blog Entries

The preceding screenshot (Figure 6.14) shows permissions on Blog Entries. The MB Topic Admin role can be set up for all permissions: Add Entry, Permissions, and Subscribe, whereas the role site member doesn’t have this capability.

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Entry</td>
<td>This provides the ability to add an entry to the Blogs portlet</td>
</tr>
<tr>
<td>Permissions</td>
<td>This provides the ability to set permissions on the Blogs portlet</td>
</tr>
<tr>
<td>Subscribe</td>
<td>This provides the ability to subscribe to the Blogs portlet</td>
</tr>
</tbody>
</table>

Obviously, as a member of the Palm Tree site, "Lotti Stein" doesn't have the permission to add an entry on blogs by default. Note that the Add Entry permission is scoped to a group or portal instance. If you want, the user "Lotti Stein" can have the ability to add an entry for blogs to all the sites where Lotti is a member with MB Topic Admin. Let's follow this simple set of steps—assigning the Add Entry permission action:

1. Log in as the portal administrator (since Roles are only accessible by the Portal administrator).
2. Click on Roles under the category Users of Control Panel first.
3. Then, locate a role, say MB Topic Admin.
4. Then, click on the Define Permissions icon from the Actions menu on the right-hand side of the role. Now, search for blogs.
5. Click on the Content | Blogs link and check the Add Entry checkbox.
6. Click on the Save button.

As shown in the preceding steps, the user "Lotti Stein" will get access rights to use the Add Entry action via the MB Topic Admin role. As the MB Topic Admin role is a regular role, the user "Lotti Stein" will get access rights for Add Entry scoped to the current portal instance. If the role is an organization or site role, then the user "Lotti Stein" gets access rights on Add Entry scoped to the organization or site.
Permissions on Blogs Entry

The following screenshot show the permissions on Blogs Entry; this permission is especially for control on the blog entry and discussions on the blogs entry. The role MB Topic Admin is able set up permissions, namely Add Discussion, Delete, Delete Discussion, Permission, Update, Update Discussion, and View. On the other hand, the roles Guest and site member cannot set up permissions with View and Add Discussion. Refer to the following screenshot for Blogs Entry entitlements.

Let's add the Add Discussion, Delete Discussion, Update, Update Discussion and View permissions to MB Topic Admin so that "Lotti Stein" will have the permission.

Follow these steps to set the permissions:

1. In Define Permissions of the role "MB Topic Admin", search for blogs.
2. Click on the Site Content | Blogs link and check the checkbox Add Discussion, Delete Discussion, Update, Update Discussion, and View under Blogs Entry.
3. Click on the Save button.

Now, "Lotti Stein" will be able to use Add Discussion, Delete Discussion, Update, Update Discussion, and View for the blog entry. If you notice, "Lotti" can update comments posted by other users.
Blogs general permissions

If any role needs access to the Blogs portlet inside the Site Administration panel, then the Access in Site Administration setting needs to be done.

The Access in Site Administration permission action represents the ability to access the Blogs portlet in the Site Administration panel. By default, the user "Lotti Stein" doesn't have the ability to access the Blogs portlet in the Site Administration panel. Suppose that you want the user "Lotti Stein" to have the ability to access the Blogs portlet in the Site Administration panel, how would you implement it? The following is an example of assigning the Access in Site Administration permission action; refer to the following screenshot:

![General Permissions](image)

Figure 6.16: General permissions on blogs

1. In Define Permissions of the MB Topic Admin role, search for blogs.
2. Click on the Content | Blogs link, check Access in Site Administration, and View from checkboxes under General Permissions.
3. Click on the Save button.

Application permissions

If permission entitlements for the Blogs application/portlet, as shown in the following screenshot are applied to Add to Page, they will allow the user to add the Blogs portlet on the page:

![Application Permissions](image)

Figure 6.17: Site application permissions on blogs
Site application permissions affect the application as a whole. So, using our blogs example, application permission might define who can add the Blogs portlet to a page. You can provide the permission to the MB Topic Admin member or either organization or site admin.

**Using blogs effectively**

Generally speaking, a blog (short for web-log) is personal online content that is frequently updated for general public consumption. Blogs are a series of entries posted to a single page in reverse-chronological order. Generally, they represent the author's personality or reflect the purpose to host the blog on the website.

The author of a blog is called a blogger. Bloggers can syndicate their blog content to subscribers using RSS. In general, blogs are frequent chronological publications of personal thoughts and web links.

**Exploring the Blogs portlet**

The Blogs portlet can help you to publish information on the Web easily. It helps in the rapid development of your site and, furthermore, gives your enterprise a platform to easily share information among different departments.

The Blogs portlet allows users of the enterprise to manage web-log entries in a portal page. You can create, edit, and delete web-log entries and change permissions on entries. In addition, it provides a simplified interface to create web-logs and publish them as RSS feeds.

The following Figure 6.18 depicts the blog structure overview. Blogs are made up of a set of entries and each entry can have many comments. In turn, each entry can have many ratings. Of course, users can rate an entry only once. Moreover, each entry enables flags, allowing users to flag content as inappropriate, and enables the capability of trackbacks. In addition, an entry can have many tags and/or categories.

![Figure 6.18: The blog structure overview](image)
Configuring the Blogs portlet

As you can see, the Blogs portlet is highly configurable. To configure blogs, including RSS feeds and e-mail settings, click on the Gear (icon) | Configuration link in the top-right corner of the Blogs portlet. The subtab of the Setup tab have the following tabs with the names Display Setting, Email from, Entry Added Email, Entry Updated Email, and RSS.

As shown in the following screenshot, you can set the display styles used to display settings for blogs. For regular pages, you can set the following items:

- **Maximum Items to Display**: This is the number of displayed blog entries.
- **Display Template**: This determines the visibility of the display of content to end users. It has settings with Full Content, Abstract, or Title. Also, you can configure Application Display Template (ADT). We will discuss ADT more in the coming chapters.
- **Enable Flags**: This is a checkbox to enable flags on blog entries.
- **Enable Related Assets**: This is a checkbox to enable related assets.
- **Enable Ratings**: This is a checkbox to enable ratings on blog entries.
- **Enable Comments**: This is a checkbox to enable comments on blog entries.
- **Enable Comment Ratings**: This is a checkbox to enable ratings on comments.
- **Enable Social Bookmarks**: This is a checkbox to enable social bookmarks:
  - **Display Style**: Social bookmarks display style—Horizontal or Vertical.
  - **Display Position**: This displays the social bookmark's position—Top or Bottom.
  - **Social Bookmarks**: There are three checkboxes for different social media, such as Twitter, Facebook, and Google+. 
Email From allows the setting of the name and the e-mail address for the blog to send messages.

Entry Added Email allows the setting of the e-mail body for the message to be sent to the user for the blog that has been added. You can customize the message as per your requirement.

Entry Updated Email allows the setting of the e-mail body for the message to be sent to the user for the blog that has been updated. You can customize the message as per your requirement.

RSS allows the setting for the RSS feed.
Setting the properties of the Blogs portlet

The portal sets the following properties in `portal.properties` by default:

```properties
blogs.email.from.name=
blogs.email.from.address=
blogs.email.entry.added.enabled=true
blogs.page.abstract.length=400
blogs.rss.abstract.length=200
blogs.ping.google.enabled=true
blogs.entry.comments.enabled=true
```

As shown in the preceding code, you can configure the e-mail from name and e-mail from address settings via the properties `blogs.email.from.name` and `blogs.email.from.address` respectively. Even the e-mail notification settings are done via the property `blogs.email.entry.added.enabled`. The default abstract length of the page is set to 400, and the default abstract length of RSS is set to 200.

You can set the property `blogs.ping.google.enabled` to `true` in order to enable pinging Google on new and updated blog entries. You can also set the property `blogs.entry.comments.enabled` to `true` to enable comments for blog entries. Of course, you can override these properties according to your own requirements in `portal-ext.properties`.

Asset Renderer Framework, search, indexing, and social activity

The framework via the `asset-renderer-factory` tag, called **Asset Renderer Framework**, will allow the registering of custom asset types so that generic portlets, such as the Asset Publisher portlet, can be used to publish them. This is the reason that we can publish blog entries through the Asset Publisher portlet. In fact, the Blogs portlet supports the Asset Renderer Framework in `$PORTAL_ROOT_HOME/WEB-INF/liferay-portlet.xml` as follows:

```xml
<indexer-class>
  com.liferay.portlet.blogs.util.BlogsIndexer
</indexer-class>
<open-search-class>
  com.liferay.portlet.blogs.util.BlogsOpenSearchImpl
</open-search-class>
<social-activity-interpreter-class>
  com.liferay.portlet.blogs.social.BlogsActivityInterpreter
</social-activity-interpreter-class>
<asset-renderer-factory>
  com.liferay.portlet.blogs.asset.BlogsEntryAssetRendererFactory
</asset-renderer-factory>
```
As shown in the preceding code, besides the `asset-renderer-factory` tag, the portlet also specifies the `indexer-class`, `open-search-class`, and `social-activity-interpreter-class` tags. The `social-activity-interpreter-class` tag adds social activity tracking to a portlet, and recorded social activities will appear on the Activities portlet.

Meanwhile, the `indexer-class` tag value is called to create or update a search index for the Blogs portlet, whereas the `open-search-class` tag is called to get search results in the Open-Search standard.

**Understanding tags and categories**

As you can see, when displaying an entry, a set of categories and tags of the current entry are also displayed next to the flag. Why? There are taglibs called `<liferay-ui:asset-categories-summary>` and `<liferay-ui:asset-tags-summary>` that allow us to tag any type of content or pages in any portlet. Of course, you can find UI taglibs `<liferay-ui:asset-categories-summary>` and `<liferay-ui:asset-tags-summary>` in `$PORTAL_ROOT_HOME/html/portlet/blogs/view_entry_content.jsp`. All you need is `Class-Name`, `Primary-Key`, and `portlet-URL` of any object to associate it with tags and categories as follows:

```html
<span class="entry-categories">
    <liferay-ui:asset-categories-summary className="<%= BlogsEntry.class.getName() %>">
        <span classPK="<%= entry.getEntryId() %>">
            <portletURL="<%= renderResponse.createRenderURL() %>">
        </span>
    </liferay-ui:asset-categories-summary>
</span>

<span class="entry-tags">
    <liferay-ui:asset-tags-summary className="<%= BlogsEntry.class.getName() %>">
        <span classPK="<%= entry.getEntryId() %>">
            <portletURL="<%= renderResponse.createRenderURL() %>">
        </span>
    </liferay-ui:asset-tags-summary>
</span>
```

As you can see, you can tag blog entries with tags and categories. The portal has specified the following code in `$PORTAL_ROOT_HOME/html/portlet/blogs/edit_entry.jsp`:

```html
<aui:input name="categories" type="assetCategories" />
<aui:input name="tags" type="assetTags" />
```

As shown in the preceding code, it uses the tag `<aui:input>` with the types `assetTags` and `assetCategories`. Of course, you can find similar code for Message Boards messages, Wiki articles, and so on.
Blogs in scope

Considering the pattern Portal-Site-Page-Content, entries of the blogs portlet can be scoped into a site, for example, all pages, including both private and public pages, by default. In addition, blog entries can be scoped into an individual page—a set of data isolated from the other data of the same portlet.

For instance, when the Blogs portlet is added to a page, for example, blogs of the Palm Tree site public page, it will use the default scope to the site. If you add the Blogs portlet to a second page, say welcome, it will show the same data as that of the previous page. This means that the Blogs portlet is scoped into the Palm Tree when it is added to any page of the same site. Fortunately, you are able to switch the content of the Blogs portlet to a different site. How can you achieve this? The following is an example:

1. Click on Admin | content and the site administration panel will open.
2. Locate Blogs under the category content of the site administration panel and click on Blogs.
3. Switch sites by selecting different sites from the drop-down menu from the dock bar. You will notice blog entries of different sites.

The Blogs portlet can be scoped into a page. How do we scope the Blogs portlet to a page? The following is an example:

1. Locate a page, say Blogs, and go to the Blogs portlet in the current page.
2. Go to Gear (icon) | Configuration of the Blogs portlet.
3. Click on the Scope tab.
4. Choose Blogs from the Scope select menu and click on the Save button.

How do you customize the scope feature? The portal has default settings for the Blogs portlet in $PORTAL_ROOT_HOME/WEB-INF/liferay-portlet.xml as follows:

```xml
<scopeable>true</scopeable>
```

The preceding code shows that the Blogs portlet is scopeable—giving it the capability to use the Gear (icon) | Configuration | Scope tab and change the scope from default to the current site.
Friendly URLs
When you view blog entries, you will see URLs, such as /web/palm-tree/ blogs/-/blogs/11201 and /web/palm-tree/blogs/-/blogs/11214. Similarly, when you view RSS feeds, you will see URLs, such as /web/palm-tree/blogs/-/blogs/rss. These are short, friendly URLs. In fact, the Blogs portlet supports friendly URL mapping in $PORTAL_ROOT_HOME/WEB-INF/liferay-portlet.xml as follows:

```xml
  <friendly-url-mapper-class>
    com.liferay.portal.kernel.portlet.DefaultFriendlyURLMapper
  </friendly-url-mapper-class>
```

As shown in the preceding code, the content inside a portlet will use a friendly URL via the friendly-url-mapper-class tag.

Blogs in communication
There is a tab called Communication under More | Configuration in the Blogs portlet, and shared parameters can be mapped into categoryId, resetCur, and tag because the portlet has the following configuration in $PORTAL_ROOT_HOME/WEB-INF/portlet-custom.xml:

```xml
  <supported-public-render-parameter>categoryId</supported-public-render-parameter>
  <supported-public-render-parameter>resetCur</supported-public-render-parameter>
  <supported-public-render-parameter>tag</supported-public-render-parameter>
```

![Blogs - Configuration](image)

Figure 6.20: Blog setup for communication
As shown in the preceding code, there are three parameters, namely `categoryId`, `resetCur`, and `tag`. Of course, you can set mapping between these parameters or even ignore some or all of them in the `Gear (icon) | Configuration | Communication` tab. You can simply change the mapping and/or ignore it and click on the `Save` button when you are ready.

**Publishing blogs**

As stated earlier, we discussed how to create entries in order to let small teams work on specific projects and share files and blogs about the project process. As a user at the enterprise Palm Tree Publication, you may have created a lot of entries, which will be needed to show a list of the latest users from a given department and the latest posts for a given department too.

**The Recent Bloggers portlet**

The Recent Bloggers portlet (portlet ID 114) shows a list of the latest users who have posted a blog entry. In practice, you may ask the question *Do you want to show a list of the last users from the Editorial department in the Palm Tree site?* The Recent Bloggers portlet would be useful to show a list of the latest users who have posted a blog entry. Let's do it by following these steps:

1. Navigate to the **Blogs** page.
2. Go to **Add | Applications** under the dock bar menu and add the **Recent Bloggers** portlet to the **Blogs** page.

![Figure 6.21: Recent bloggers](image)

You can do the configuration for display settings and a recent blogger in the Palm Tree site from a different organization. Let's do it:

1. Click on **Gear (icon) | Configuration | Setup** of the portlet.
2. Choose **Select Method** from **Users** and **Scope** using the **Users** default value.
3. Select an organization, for example, **Editorial Department**, using the default value in this example.
4. Select the display style, for example, *User Name and Image*, using the default settings.

5. Select **Maximum Bloggers to Display**, in this case, 10.

6. Click on the Save button when you are ready.

Of course, you can select other organizations, for example, **IT Department**. The Recent Bloggers portlet will show a list of the latest users from the **IT Department** in the Palm Tree site. You can also remove the organization if required. In this case, the portlet will show a list of the latest users from any of the departments in the Palm Tree site.

![Recent Bloggers - Configuration](image.png)

Figure 6.22: Recent bloggers configuration

As you can see, the Recent Bloggers portlet grabs blog entries from the current portal instance or by specific organizations. As shown in the previous screenshot, the Recent Bloggers portlet is configurable. You can configure it with the following items:

- **Selection Method**: Users or Scope
- **Organization**: Select or remove organizations when users are selected
- **Display Style**: User Name and Image and User Name
- **Maximum Bloggers to Display**: Number of bloggers

In a word, the Recent Bloggers portlet allows us to show a list of the latest users of the portal instance who have written a blog entry.
Blogs, WYSIWYG Editors, and Social Networking

Settings for the Recent Bloggers portlet

As you can see, the Recent Bloggers portlet is configurable and scopeable. Why? The portal has default settings for the Recent Bloggers portlet in $PORTAL_ROOT_HOME/WEB-INF/liferay-portlet.xml as follows:

```xml
<configuration-action-class>
    com.liferay.portal.kernel.portlet.DefaultConfigurationAction
</configuration-action-class>
<scopeable>true</scopeable>
```

The preceding code shows that the Recent Bloggers portlet is scopeable—it has the capability to use the More | Configuration | Scope tab and the ability to change the scope from default (current group) to the current page. The Recent Bloggers portlet is configurable with the configuration-action-class tag, which allows users to configure the portlet at runtime.

In addition, the look and feel of the portlet can be changed in the theme. Therefore, you can change the theme as you want to. Furthermore, you can change the view of the portlet directly at $PORTAL_ROOT_HOME/html/portlet/recent_bloggers/view.jsp.

For example, you can configure the portlet by selecting a display style from either of the two options, User Name and Image and User Name. In the previous file, you only have permission to update and set the display style as image.

The Blogs Aggregator portlet

The Blogs Aggregator portlet (portlet ID 115) grabs blog entries from the entire portal or by specific organizations. Do you want to show the latest posts from the Editorial department in the Palm Tree site? Let’s do it by following these steps:

1. Add the Blogs Aggregator portlet to the Blogs page from the dock bar.
2. Click on Gear (icon) | Configuration | Setup.
3. From the Select Method menu, choose from the Users and Scope options; use the default value Users.
4. Select an organization, for example, Editorial Department, using default settings.
5. Select display styles, such as Abstract. Other display styles are available, such as Body and Image, Body, Abstract without Title, Quote, Quote without Title, and Title. Use the default settings.
7. Select the **Enable RSS Subscription** checkbox.
8. Click on the **Save** button when you are ready.

The following screenshot shows the Blogs Aggregator configuration screen:

![Blogs Aggregator - Configuration](image)

Of course, you can select other organizations, for example, IT department. The Blogs Aggregator portlet will show the latest entries from all the entries of the IT department in the Palm Tree site. Also, you can remove the organization if required and select **Scope** as the value of **Select Method**. In this case, the Blogs Aggregator portlet will show the latest entries from all the entries of any department in a group, such as the Palm Tree site.

As you can see, the Blogs Aggregator portlet grabs blog entries from the current portal instance or from a specific organization. As shown in the preceding screenshot, the Blogs Aggregator portlet is configurable, and you can configure it using the following items:

- **Selection Method**: **Users** or **Scope**
- **Organization**: This is used to select or remove organizations when users are selected; this aggregates blogs from only specific organizations
Blogs, WYSIWYG Editors, and Social Networking

- Display Style: Body and Image, Body, Abstract, Abstract without Title, Quote, Quote without Title, and Title
- Maximum Items to Display: This is the number of blogs
- Enable RSS Subscription: This is a checkbox that allows users to subscribe using RSS

In general, the Blogs Aggregator portlet shows the latest posts from all the entries of any department in a group, such as the Palm Tree site, which specifies the blogs that should be aggregated. It specifies a set of display styles and, moreover, it has the ability to expose an aggregated RSS feed.

What's happening?

Similar to the Recent Bloggers portlet, the Blogs Aggregator portlet is configurable and scopeable.

In addition, all the look and feel of the portlet can be changed in the theme. Therefore, you can change the theme as you want. Furthermore, you can change the view of the portlet directly at $PORTAL_ROOT_HOME/html/portlet/blogs_aggregator/view_entry_content.jsp.

Exploring Social Networking

Social networking became a new trend in web portals. It allows us to be connected with our loved ones, family, friends, and colleagues. There are many ways by which individuals can be connected with other individuals.

Nowadays in the organization portal, social networking plays an important role, which leverages their employees to connect with each other through social interaction, such as chat, personalized pages, adding friends, viewing friends' activities, and much more.

Liferay Portal 6.2 provides you with lots of features for social activities. Let's discuss each of them in detail.
In Liferay, as we know, all users have their private and public pages. Now, Liferay provides many portlets for social interaction by which you can achieve social interaction among users with respect to organization and site permissions.

Let's try to design a social interaction among the users/employees of the Palm Tree organization. First, you need to install the Social Networking portlet from Marketplace. Liferay provides a new feature to install any application from one place called Marketplace. It's a kind of hub for all the community edition and enterprise edition portlets.

**Installing the Social Networking portlet**

Here, in this section, you will see how to install portlets from Marketplace:

1. Log in as the portal admin.
2. Navigate to Admin | Control Panel, click on Apps, and then click on Store.
3. Log in with Liferay site credentials and the Market Place page will load.
4. Search for Social Networking CE, set the Communication category, and select the Portal version (which is run currently). Keep the price blank. Finally, click on the Search button.
5. The Social Networking CE app will be listed. Click on Social Networking CE; you will be redirected to a different page, from where you can purchase it. Click on the Free button, which will again redirect you to another page called Purchase. Here, select the project or select for personal use only; then, check the agreement checkbox. Finally, click on the Purchase button.
6. Once you purchase, it will be available inside the Purchased link under Marketplace.
7. Now, you can Install the particular app.
Follow this screenshot for **Social Networking CE**:

![Figure 6:24: The Marketplace store](image)

Note that Marketplace works on the Internet. If you are not connected to the Internet, you will get an error message. So, for the store and the purchase, we need to be connected to the Internet. Most of the apps with Community Edition (CE) and Enterprise Edition (EE) are free to purchase.
The Members portlet provides you with a list of the members in the particular organization. It helps all the users to know who are associated with the current organization. Refer to the following screenshot for detailed understanding.

Note that if the users are only members of the site and not the organization, then the Member portlet will not display those users.

You can do the setting for the permission in the configuration option and place the portlet in the home page of the site. The following screenshot shows the Members portlet:

![Figure 6.25: The Members portlet](image)
The Activities portlet is the one that provides you with the activity/event list. It captures all the activities of the users on the portal, including the events, documents uploaded, and comments on blogs and displays it on the Activities portlet, as shown in the following screenshot. It generally focuses on the entire portal.

![Activities Portlet Screenshot](image)

**Figure 6.26: The Activities portlet**

In the preceding screenshot, you can see that Sachin has created the latest comment on the blogs. The comments are displayed using the activities portlet with tags provided to it.

The Activities portlet is a kind of news feed similar to the one on Facebook, and it also allows you to have an RSS URL to use on external sites.

In the configuration option, you can set the limit on the display list by setting the value for **Maximum Activities to Display**. It will restrict the list to be displayed on the portlet. You will also be able to set up the permissions too.
The Members Activities portlet acts as a feed similar to the one on the Activities portlet, but it provides a more detailed member activities list of a particular site, as shown in the following screenshot:

![Members' Activities](image)

Figure 6.27: Member's activities

In the preceding screenshot, you can see that the site members' activities have been listed, for example, Sunil and Sachin have become friends. So, it will track all the activities done on the site.

There is one more Activities portlet, named Friends Activities portlet, which you can place in the users' public pages and track your friends' activities.
Managing a personal page with the Social Networking portlet

Liferay provides you with unique portlets, while allowing you to create user personal pages for social networks, such as Facebook and Google+. In the user's personal page, you can place few a portlets, as shown in the screenshot (Figure 6.28), such as Summary, Request, Friends, Wall, Page Comments, and Friends' Activities.

In the following screenshot, you can see Sunil Goyal's personal page (My Profile), where the Summary portlet provides the user's information with the user's full name, avatar (image), job title, about me, and the link to edit profile. Edit Profile allows users to edit Job Title and add About Me content. Even you can find the link for My Account inside the Edit Profile page from where you can change the user's details, such as password, e-mail address, and much more.

The Requests portlet allows you to get requests from friends, as shown in the following screenshot, where Rajeeva has requested for friendship with Sunil. Now the Request portlet shows the two options Confirm and Ignore. Confirm will add Rajeeva as a friend in Sunil's Friends portlet, while Ignore will reject the request.

The Friends portlet lists all the friends of users with the link to the profile. Once Sunil confirms Rajeeva as a friend, Rajeeva will be listed in the Friends portlet in the same way that Sachin was.

The Wall portlet allows the posting of the status on the user's page (wall). It allows users and their friends to put the status.

The Page Comments portlet allows users and their friends to comment on the status. You can subscribe to comments too.

The Friends Activities portlet lists all the activities done by his friends on the portal.
Chapter 6

The following is the screenshot of the Social Networking site for individual users:

![Figure 6.28: A user's personal page](image)

You need to set up the portal for the user's personal page so that all the users have the same social networking features. To achieve this, the best way is to configure the portal in such a manner that pages with a specific portlet are automatically displayed for the personal page.

By using **User Groups**, we can get the portlets on the page so that all users have common features. Follow these steps to achieve this:

1. Create a user group first.
2. Assign the users to the group.
3. Then, create the pages by adding and arranging portlets on it.
4. Finally, map to the user's personal site.

You can do the setting for the User Groups site, where users can't modify pages and the administrator can change in the future. Using the portal settings, it is possible to set **Default User Associations** to have all users be members of a particular group while creating users.
In the User Groups template, you can enable propagation of changes from the site template, which allows managing the user's personal pages in a whole portal if the user is a member of that particular group.

The other way to achieve the same is by configuring portal properties. In the portal-ext.properties file, you can mention the default layout and portlets for the user's personal pages. This will be implemented in the user's entire personal page of the portal. Default User Private Layouts and Default User Public Layouts can be configured to set up the default template for the user's personal and private pages.

Note that User Groups is the standard and easy way to create the personal page for the user.

Creating a template for Social Networking
Let's create a template with the name Social Networking, which we can map with User Groups:

1. Click on Site Template under the Site category of Control Panel.
2. Then, click on the Add button and enter a name for New Site Template in the Name input field (for example, Social Networking).
3. Enter the description of Site Template.
4. Leave the Active checkbox as default; uncheck Allow Site Administrators to Modify the Pages Associated with This site Template; by this, the administrator will not be able to modify the template.
5. Click on the Save button to save the input.

The following screenshot shows the Social Networking template creation.
Now, after you have created the site template, you need to manage pages for the particular template where you can place the portlets. Then, finally, you need to map the template with the user group and assign the users to that particular group so that all the users have the same personal or private pages.

![Figure 6.29: Site Templates](image)

Now, let's create a page template to configure the portlets of a particular page for Social Networking:

1. Click on **Page Templates** under the **Site** category of **Control Panel**.
2. Then, click on the **Add** button and enter a name for the new page template in the **Name** input field (for example, **Home**).
3. Enter the description of the site template. Check the **Active** checkbox.
4. Click on the **Save** button to save the input.

You can use this page template for any page where you have placed the Social Networking portlet, which we have mentioned earlier.

After the creation of the page template, just click on **Edit** from the **Action** button and click on the configuration link, which will open a new window with the **Home** page.
Now, add the Social Networking portlet on the page; in other words, arrange the page as per Figure 6.27. The page template page will look somewhat similar to the following screenshot. Once it is mapped by any page, then all the portlets will be rendered properly.

Once you've configured the page with the portlets, you just need to set the Manage Pages tab for Social Networking from the site templates. Let's do the settings:

1. Click on Site Templates under the Portal category of Control Panel.
2. It will list all Site Templates. Click on the Action button beside the Social Networking Template tab and select Manage Pages.
3. In Manage Pages, you'll able to manage the pages for the particular template. By default, the Home page is created under the parent page (pages).

Note that you can directly place the Social Networking portlet under the Home page, which is already created by Liferay, or you can use the Page Templates feature to do so. Page Templates helps you to use the defined template for the page that has the proper design and placed portlets in it.

4. Let's use the Page Templates feature for this example. Delete the Home page, and create a new page by clicking on the Add Child Page button. You will get a popup to create a new Child page.
5. Fill the name, say Home, and select the template as Home, which you created earlier.

6. Click on the Add Page button.

Now, the page has been created, and your site template is mapped with the page template. So, if you modify or edit the page template, it will reflect everywhere you have used it.

Let's create a user group and select the public site template as a Social Networking group:

1. Click on User Groups under the Users category of Control Panel.
2. Then, click on the Add button. Enter a name for the new user group in the Name input field (for example, Social Networking).
3. Enter the description as Social Networking Group.
4. Enter the user group site details; for Public Pages, select Social Networking Site, and for Private Pages, select Community Site.
5. Check the Enable propagation of changes from the site template checkbox.
6. Finally, save it.

The members of this user group will have their public pages as the Social Networking page template. So, you have to assign the users to this group.

As mentioned earlier, you can configure the portal setting in such a way that whenever new users are created they will be assigned to the Social Networking user group.

Let's do the setting for the Default Users Associations tab:

1. Click on Portal Settings under the Configuration category of Control Panel.
2. Click on the Users link from the right-hand side panel, and select the Default Users Associations tab from the navigation.
3. Enter a name for the user group in the User Groups Name input field (for example, Social Networking).
4. Save it.
Now, whenever a new user is created, they will be associated with the Social Networking group.

![Portal setting—default user associations](image)

Figure 6.31: Portal setting—default user associations

Understanding how Liferay connects friends to friends using collaboration, we see that in Facebook and Google+, people are connected with each other and share their views because they have common interests. There are many ways to connect to users in social media, let's say if someone has posted something interesting, you add them as a friend.

The same thing happens in Liferay Social Networking—you will have many portlets, which always prompt you to find common interest people in portlets, such as the Friends, Activities, Members Activities, Calendar portlets, and many more portlets.

Liferay provides you with collaboration portlets, such as blogs, wikis, Message Boards, and Dynamic Data List. You can send a friend request to anyone when their idea or comments interests you and you have some common area of talk. Say you feel someone's wiki post is nice, and you want to be connected with that person, so you can simply send a friend request.
You can implement the social networking features in your custom portlets too using the Social Networking API—for instance, if you want to integrate social activity with custom portlets, you have to define `<social-activity-interpreter-class>` in liferay-portal.xml. There are a lot of things we can do with social networking.

**Integrating social networking with Liferay**

As we know, nowadays, social networking is very popular due to the likes of Facebook, Twitter, Google+, and LinkedIn. You might come across a situation where your portal content needs to be displayed on Facebook for some specific users. So, you need to integrate Facebook with Liferay.

Liferay provides a very easy way to integrate Facebook and other social networking sites. You can add a Liferay portlet on Facebook as an application, such as Message Boards, calendars, wikis, and other content on the portal available to Facebook users. For this, you must have a developer key. In all the portlets, you will find the Facebook tab in the portlet's configuration pop-up screen. Once you create an application on Facebook, get the developer key and also the Page URL from Facebook so that you can paste that URL in the portlet configuration under the Facebook tab. Now, you can find your application on the Facebook page.

**Signing on with Facebook**

We find lot of sites have sign on with Facebook. Let's try to create this sign on in Liferay Portal too. So, to sign on to the portal, you can use the Facebook username and password:

1. First, you need to have the Facebook application account to get a new account and follow the link developers.facebook.com/docs/guides/web.
2. Now, you have to edit settings under the Web Site tab. Fill in the Site URL text field and the Site Domain text field. If you're testing locally, you can set Site URL as http://localhost:8080 and Site Domain to localhost. I've added an entry in my hosts file, so bookpub.com would hit my local Tomcat at port 8080. Click on Save when you're done with your settings.
   
   Note that if you do change your domain, make sure you update all the relevant areas.
3. Log in as an administrator in Liferay Portal.
4. Go to the Portal settings tab under the configuration category in Control Panel.
5. Then, click on Authentication on the right-hand side menu and then click on the Facebook tab.

6. Check the checkbox to enable Facebook SSO. Next, fill in Application ID, which is a numeric ID (not to be confused with the application key) and Application Secret (don't tell/show anyone this), and then update the domain part of Redirect URL if you are not using localhost (I changed mine from localhost to bookpub.com).

7. Click on Save when you're finished.

Finally, you can see the Facebook link under the password field in the login portlet. Or if you are already logged in to Facebook in the same browser, it takes the same credentials to connect you.

![Figure 6.32: Facebook setting](image-url)
Summary

This chapter introduced you to the WYSIWYG editor and gave a clear idea about how to install in CKEditor. It also introduced you to adding entries to blogs, managing (that is, to view, update, and delete) entries of blogs, and adding comments to a given entry of blogs first. Then, it discussed how to assign permissions on the Blogs portlet and entries of blogs. It also introduced the ways to publish blogs through the Recent Bloggers portlet and the Blogs Aggregator portlet and acquainted us with building blogs with the WYSIWYG editor CKEditor. Finally, it discussed RSS and other related portlets, such as the RSS portlet. You learned how to create a social networking environment in a portal, manage personal pages, and connect to friends. Also, we configured the sign on between Facebook and Liferay Portal.

In the next chapter, we will be learning about sites in detail.
Understanding Sites

In the intranet portal bookpub.com of the enterprise Palm Tree Publications, it would be nice to have the ability to build websites within a short time. Liferay 6.2 provides you with Site, where employees can share interests about the Book Street and Book Workshop sites and roll out to other teams. The sites provide teams with the ability to create and manage sites and enable their members to build different websites. The site has its own pages, which include public pages and private pages, content management systems, membership management, and permissions management. Each site maintains its own individual site scope.

Meanwhile, it would be nice if we could stage, schedule, and publish web content in our portal bookpub.com locally or remotely through workflow. As a content creator, you can update what you’ve created and publish it in a staging area. Then, other users can review and modify it in the staging area. Moreover, content editors can make a decision whether to publish web content from staging to live. Before going live, you can schedule web content as well. For publishing features, you can choose either local publishing or remote publishing; you can publish either the entire website or just a subset of pages.

This chapter will discuss how to manage sites. It will include a discussion on how to create and manage sites as well as how to create and manage the pages, teams, and members within a site. It will also introduce staging and publishing, workflow, scheduling, virtual hosting, and a set of site tools.

By the end of this chapter, you will have learned how to:

- Manage sites, pages, teams, and memberships of sites
- Apply site templates and page templates
- Virtual hosting, stage, preview, and publish websites
Understanding Sites

- Schedule and publish remotely
- Application Display Template (ADT), Social Activity, Workflow Configuration and Mobile Device Families

Site

As an administrator at the enterprise Palm Tree Publications, you would be required to provide an environment to roll out to other teams. Thus, you can provide an environment for users to manage the site, which includes managing pages (both public pages and private pages), managing teams, assigning members, assigning user roles, and so on.

What's a site? Loosely speaking, a site is a special group where users in the group share the same or similar interests. In general, a site is a collection of users who have a common interest. Both roles and users can be assigned to a site that are given exclusive access to specific pages or content.

Actually, sites are special groups that have a set of users or a set of user groups. Thus, a site may have a set of users associated. An organization can be associated and unassociated to an existing site whenever required for business needs.

As mentioned earlier, an organization is a special group too. So, you may ask: what's the difference between a site and an organization? When should you use sites instead of organizations?

There is a very thin line between both. Sites are mainly about pages, and organizations are about user management. Sites can have members and can be hierarchical too. Sites can be open, restricted, or private based on the privacy needs of the site, whereas organizations don't have such features; they are always considered to be centrally maintained.

Therefore, if you are planning to build a website and provide the ability to join and invite members and no user management is needed, then use sites. If you are planning to build a website and a hierarchical structure is required, then use organization.

Note that sites can be managed hierarchically; whenever we create an organization, the hierarchy should match the site hierarchy so that the portal doesn't confuse the two.

Basically, a hierarchical site makes the managing of site memberships and site content sharing much simpler.
In general, there are two portlets: the first portlet is Sites Admin (portlet ID 134) in Control Panel and the second is My Sites (portlet ID 29). "Why are there two portlets?" you may ask. The My Sites portlet provides a way to navigate from site to site and can be added to any page in the current portal instance. Let's discuss the Site Admin portlet first, followed by the My Sites portlet.

Adding a site

As we have discussed in previous chapters, Control Panel has different categories—sites is one of them. Under the sites category, there are site templates and page templates. The Portal administrator has the right to create and manage sites, site templates, and page templates from the control panel. The Site administrator can manage pages, users, content, and configuration of the site from the site administration panel.

In Chapter 2, Setting Up a Home Page and Navigation Structure for the Intranet, we saw how to create a site; let's create a site again and discuss it in detail:

1. Log in as a portal administrator.
2. Click on Admin | Control Panel from the dock bar menu.
3. Click on Sites under the Sites category of Control Panel.
4. Click on the Add button; a dropdown will appear (with Blank Site, Community Site, Intranet Site, and Manage Sites Templates). Select Community Site.
5. Fill in the site name, say Book Street, and the Description, check the Active checkbox (to make the site's state active), select the Membership type from the options—Open, Restricted, and Private—Open in this case. Select Public pages and Enable the propagation of changes from the site template.
6. If there is a site hierarchy, you can select the parent site, too. For this example, the site will be left as it is.
7. Finally, save the changes.
Creating a Site in Liferay is very simple and straightforward. The following screenshot illustrates the creation of the site with the name **Book Street**. Create another site called **Book Workshop**.

![Figure 7.1: Site creation](image)

In Liferay, sites allow the user to perform the task much easier and faster using predefined site templates. There are three types of Site templates provided by Liferay: **Blank Site**, **Community Site**, and **Internet Site**. You can create your own template whenever it is required.

If you have not created the site while creating the Organization, you can create the site separately and map the site with the organization manually. All users of the organization will be members of the site automatically. And the Site name and description will be automatically synced with those of the organization.

Note that the **Active** checkbox allows you to make the site active and deactivate.
After saving the Site, you will be redirected to the Site settings page for a specific site. Follow this screenshot:

![The Site Settings page](image)

Figure 7.2: The Site Settings page

Site settings allows four main settings sections: Basic Information, Search Engine Optimization, Advanced, and Miscellaneous:

- **Basic Information**: Details (site information), Categorization, Site URL, and Site Template
- **Search Engine Optimization**: Sitemap and Robots
- **Advanced**: Default User Association, Staging, Analytics, Content Sharing, and Recycle Bin
- **Miscellaneous**: Custom Fields and Display Settings
Let's discuss each of these sections in brief.

- **Basic Information:**
  - **Details:** This allows an administrator to change site settings, such as the description and membership type of a site, and also allows specifying private and public pages of a site. Even you can configure Application Adapter Template (ADT) and select the Parent site for the current site.
  - **Categorization:** This allows an administrator to apply categories and tags to the site.
  - **Site URL:** The administrator can set a friendly URL and/or a virtual host for the site. Also, the site administrator can enable the directory indexing for Documents and Media.

A friendly URL helps you to manage the path of the site in the portal's URL. It is used for both public and private pages. For public pages, a friendly URL is appended to `http://localhost:8080/web`. For private pages, friendly URLs are appended to `http://localhost:8080/group`. A friendly URL is always unique as regards its name, and it should be friendly with respect to human readability, which helps in indexing bots and is critical to good search engine optimization. Virtual hosts help in easy web navigation for the end user by connecting a domain or subdomain to a site.

- **Site Template:** When the site is created from a site template, it will display information about the association between the site template and the site.

- **Search Engine Optimization:**
  - **Sitemap:** It allows the administrator to send the sitemap to search engines so that they can crawl your site. The administrator can view what is being sent to the search engines by clicking on the Preview link to see the generated XML.
  - **Robots:** Before setting the robots.txt rule, you might have to set up virtual hosting for the site.

- **Advanced:**
  - **Default User Associations:** The administrator can configure site roles and teams that newly assigned site members will have by default.
° **Staging:** When the administrator enables staging locally/remotely, it allows you to edit and revise a page before publishing. We will discuss staging more in detail later in this chapter.

° **Analytics:** An administrator can set the Google Analytics ID; this will get inserted in every page. Google Analytics provides services that let you do all kinds of traffic analyses on the site. An administrator can also configure piwik, which is a web analytics platform that can provide valuable information on your site's visitors. It is basically used for marketing campaigns.

° **Content Sharing:** This allows the administrator to configure the content sharing between the parent site and the child site. The default value here is "enabled".

° **Recycle Bin:** The administrator can set the option to enable/disable Recycle Bin for the site. The administrator can also set the trash entries' maximum age, that is, the number of days for which content can be stored in Recycle Bin until it is permanently deleted.

• **Miscellaneous:**

° **Custom Fields:** It allows editing the custom fields, which administrators have already configured for the site resource. If it is not defined, the administrator can define in Control Panel — Custom Fields under Configuration.

° **Display Settings:** The administrator can change the language for the site. There are options to use default language options or define a new default language.

### Managing sites

After adding a set of sites, you can manage them easily. You can view sites and search, edit, and delete sites as well.

### Viewing sites

To view the available sites, you need to have proper access rights. You can simply click on Sites under the Sites category Control Panel. Note that as a portal administrator, you will be able to see the entire Sites list in the current portal instance.
As shown in the following screenshot, sites will appear with **Name**, **Type**, **Members**, **Active**, **Pending Request**, and **Tags** and the **Actions** button with a set of icons, such as **Site Administration**, **Add Child Site**, **Go to Public Page**, **Leave**, **Deactivate** (deactivate the site), and **Delete**.

- **Name**: The name of the Sites, link to the child sites (if there are any), an orderable column. In the screenshot, the Palm Tree site has five child sites.
- **Type**: This can be **Open**, **Restricted**, or **Private**.
- **Members**: This is the number of members and the number of organizations associated.
- **Active**: This can be either **Yes** or **No**.
- **Pending Requests**: This is the number of members who have requested for membership.
- **Tags**: These are the tags of sites.

The following screenshot displays all the sites in the portal. Palm Tree, with its five child sites, is also listed in the list that follows the screenshot:

![Control Panel](image)

Figure: 7.3: View all sites
• **Site Administration**: This action will redirect you to the site administration panel (site settings) where you can update the current site

• **View Child Sites**: This action allows you to view child sites for a particular site

• **Add Child Site**: This allows you to add a child site for a particular site

• **Go to Public Pages**: This is a link to the public page of the site

• **Deactivate**: This will deactivate the site, and the site members will not be able to access the site

• **Delete**: This allows you to delete a particular site

### Searching sites

To search sites, you can simply type the search criteria in a search input field first. Then, click on the **Search** button. The portlet will list the search results, that is, a list of sites, where each site has columns such as **Name**, **Type**, **Members**, **Active**, **Pending Request**, **Tags**, and the **Actions** button with a set of icons.

Liferay 6.2 has the advanced search feature too; if you want to search for any specific site with respect to the name or description with all or any matches. It's very simple. You just need to click on the **Gear** icon beside the search button, input the name or description fields, and click on the search button. It will filter according to your search criteria.

### Editing a site

Let's suppose that you want to update the description of the site "Book Street" with a new description, "A site for Book Street". As a portal administrator or site administrator, you will have the permission to update the site settings. As shown in Figure 7.2. From the site's setting page, you can simply set the new description **A site for Book Street** in the description field and save it.

Note that Site Administration Panel has control over the whole site. Under **Configuration** | **Site**, settings allow the site administrator or portal administrator to update the site with all the possible settings provided.
Deleting a site

Let's suppose that the site "Book Street" doesn't exist anymore; you're going to delete it. The following are the simple steps to delete the "Book Workshop" site:

1. Click on Site under the Sites category of Control Panel.
2. Locate a site, let's say Book Street, that you want to delete.
3. Click on the Delete icon from the Actions button on the right-hand side of the Book Street site.
4. A screen will appear asking whether you want to delete the selected site. Click on the OK button to delete, or click on the Cancel button if you don't want to delete the selected site.

Note that deleting a site will delete all pages that belong to the site. At the same time, the links of all users and roles assigned to the site will get released immediately.

Creating and managing pages

A site is just a shell that can contain a set of pages—both public pages and private pages. Via the site Administration Page | Site pages, you would be able to manage the pages of a given site if you have proper access rights.

Viewing pages

As a Site Administrator, you can navigate to the Admin tab in the dock bar and select Site Administration | Pages. It will redirect you to the Site Administration page, so now you can edit and configure the site pages.

For our example "Book Street" site, you have to log in as the portal administrator and select the "Book Street" site from the My Sites drop-down menu in the dock bar. Finally, select the Site Administration page from the Admin tab. Or you can go to Control Panel | Sites and click on Site Administration from the Actions tab on the right-hand side of the site. The pages that belong to the "Book Street" site are displayed in a tree structure on the left-hand side. Every page can have child pages, as shown in the following screenshot:
In Chapter 2, Setting Up a Home Page and Navigation Structure for the Intranet, we discussed the topics Building pages and Setting up portal pages. That will give you a clear idea about managing pages in a site. Let’s discuss more advanced features of pages.

In brief, you can add, edit, and delete pages and assign permissions on individual pages. You can use the following functional items, but you are not limited by that. By the way, you can reorder pages by dragging and dropping pages. Thus, you can change the parent/child relation between pages:

- **Public Pages**: This is about managing public pages of the current site
- **Private Pages**: This is about managing private pages of the current site
- **View Pages**: This opens in a new tab with public pages or private pages displayed with full look and feel
- **Add Page**: This is about adding a new page to the current site
- **Export**: This is about exporting the current site pages, either public pages or private pages of the current site, to LAR files
- **Import**: This is about importing the current site pages, either public pages or private pages to the current site, as LAR files
Understanding Sites

- **Look and Feel**: This is about changing themes of either public pages or private pages
- **Logo**: This is about uploading a logo for public pages or private pages that will be used instead of the default enterprise logo
- **JavaScript**: This allows us to paste JavaScript code that will be executed at the bottom of the page
- **Advanced**: The advanced link provides the settings to merge the page
- **Mobile Device Rules**: This allows you to select mobile device families on the current page. A mobile device family is a set of rules configured for different mobile operating systems. See more details in the upcoming *Mobile Device Families* section of this chapter.

Note that once you select the page under public pages, you will get more control to manage an individual page.

- **Add Child Page**: This adds a new child page to the selected page
- **Permissions**: This sets permissions for the selected page
- **Delete**: This allows you to delete the selected page
- **Copy Applications**: This copies the portlets from a selected page to a different page

Site pages have public and private pages, which have different sets of pages and their settings. The following screenshot shows the public **Home** page settings details:

![Site Pages](image)

Figure 7.5: Site Pages
The following list explains the links in the right-hand side panel in the preceding screenshot:

- **Details**: This link provides page details, such as Name, Hide page from Navigation Menu, Friendly URL, and Page Type.
- **SEO**: The SEO link allows the setting of the HTML title, meta tags (Description, Keywords, Robots), and Sitemap (Include, Page Priority, Change Frequency).
- **Look and Feel**: This link allows changing themes of either public pages or private pages.
- **JavaScript**: This link allows us to paste JavaScript code that will be executed at the bottom of the page.
- **Custom Fields**: This link allows setting of the custom fields for the selected page.
- **Advance**: This link provides the settings for Query String, Target, and icon of the page.
- **Mobile Device Rules**: This allows settings of the same mobile device rules as that of the public page. It even allows the administrator to define specific mobile device rules for this current page.
- **Embedded Portlets**: This link allows embedding portlets in the page.
- **Categorization**: The administrator can set the categories and tags for this current page.
- **Customization Settings**: This link allows settings to customize the current page for the users selected. Users with the permission to customize this page will be able to customize those sections marked as customizable. It gives the option to select columns to make it customizable, based on the layout selected. This is about importing and exporting pages.

The export and import of data generally revolves around the concept of storing data outside the portal permanently or temporarily. The portal does this by handling the creation and interpretation of LAR files. The functions of data export and import are done portlet-wise. In the Site Administration page, you would be able to export all pages—either public pages or private pages of a given site—to a LAR file. What would you like to export? The following are possible items that you can include, but you are not limited to these:

- **Pages**: By default, you can select the required pages by clicking on change link. A pop-up window where you can select required pages will open. By default, it has Site Pages Settings, Theme settings, and Logo.
• **Application Configuration**: You have two choices: All Applications, Choose Applications. By default, this includes Setup, Archived Setup, User preferences, Data, and portlets, such as, Blogs, Web Content, Dynamic Data List, and so on.
  - **All Applications**: The configuration of all applications will be exported. The export of archived setups and user preferences can be disabled using the Change link option.
  - **Choose Applications**: Only the configuration of selected application will be exported.

• **Content**: You have two choices: All Content and Choose Content. By default, it has Date Range, Categories, Document and Media, and so on.
  - **All Content**: The content and metadata of all the applications will be exported.
  - **Choose Content**: Only the content and metadata of the selected applications will be exported using the change option to disable the export of the content and metadata for each application.

• **Permissions**: The permissions assigned to the exported pages and individual portlet windows will be included if this option is checked.

Now, let's export pages in a given site, for example, "Book Street", by following these steps:

1. Click on **Site Pages** under the category **Site Administrating panel**.
2. Select pages—either public pages or private pages. Let's say that you're going to export public pages; click on the **Public Pages** tab.
3. Click on the **Export** button. Now, it will export all pages (public pages in this example), their layouts, their configurations, their look and feel, and their permissions to a LAR file (Liferay Archive). On clicking on the Export button, a popup will appear, and you would be asked to export the selected data to the given LAR filename and select what you would like to export.
4. Click on the **Export** button. The **Current and Previous** tab will open where it will record the LAR file details. It will generate a LAR file and save it in the portal. Here, you will find the download link from where you can download the LAR file to save it locally.
Exporting the data to another Liferay instance is very simple using the LAR file. The following screenshot shows that the export of public pages into a LAR file:

![Figure 7.6: Site pages export](image)

Of course, you would be able to export private pages too. To do so, first, click on the Private Pages tab, and then click on the Export button.

If necessary, you can import a LAR file into the current site by following these steps:

1. Select pages (either public pages or private pages). Let's say that you're going to import public pages. Click on the Public Pages tab.
2. Click on the Import button.
3. After clicking on the Import button, the import popup will appear and would be asked to import (upload) a LAR file. Once it's uploaded, the LAR file will ask for configuration steps. You can configure the import data and select what you would like to import, such as pages, applications, content, and permissions.
4. Click on the **Continue** button. Now, you have to set Update Data for the LAR file, such as **Mirror**, **Mirror with overwriting**, and **Copy as New**. The Author settings for the current content are as follows:

   - **Mirror**: All data and content inside the imported LAR file will be created as new the first time while maintaining a reference to the source. Subsequent imports from the same source will update the entries instead of creating new entries.
   
   - **Mirror with overwriting**: This shows the same behavior as the mirror strategy, but if a document or an image with the same name is found, it will overwrite it.
   
   - **Copy as New**: All data and content inside the imported LAR file will be created as new entries within the current site every time the LAR file is imported.

5. Click on the **Import** button. The portal will overwrite the selected data of the current site. The **Current and Previous** tab will open, where it will record the LAR file details.

Page Import always maintains the history of the **current and previous** imports of LAR made in public or private pages. The following screenshot shows the current and previous import list:

![Figure 7.7: Site pages import](image)

Of course, you will be able to import to private pages, too. To do so, first click on the **Private Pages** tab and click on the **Import** button. Moreover, you would have the ability to merge data and manage the ID of resources. A word of caution: you can export permissions on resources but not on users (not even roles). Therefore, roles and users have to be the same on the source as well as the target.
Note that LAR is short for Liferay Archive. It includes all of the pages, their layouts, their configurations, their look and feel, their permissions, and so on. Importing a LAR file will overwrite any existing pages of a given site configured in the LAR file.

**Updating the look and feel of pages**

Besides the ability to export and/or import either private pages or public pages, you have the ability to change themes, that is, the look and feel of these pages as well. In general, each page must have a theme associated; all pages from either public pages or private pages can share the same theme.

Let’s say that you are going to apply the theme "so-theme" on the public pages of the site "Book Street". There are two tasks you have to accomplish: firstly, deploy the theme "so-theme". Secondly, apply the theme "so-theme" on public pages. How to implement it? The following are the steps:

1. Drop WAR file $so-theme-war to the folder $LIFERAY_HOME/deploy. The portal will deploy it automatically in the currently running Liferay Portal instance.
2. Select the "Book Street" site from My Sites, and then click on Admin | Pages from the dock bar, which will bring you to Site Administration Panel.
3. Select pages—either public pages or private pages. Let’s say that you’re going to apply a theme on a public page. Click on the Public Pages tab. Now, let’s select Public Pages.

   Note that you can implement the theme at the parent level too. Implementing the theme to Public Pages will apply to all the pages. Even different themes can be applied to different pages.

4. Click on the Look and Feel link (by default, it’s selected) and you would see the available themes, such as Classic.
5. Now, select your own theme, that is, so-theme. And finally save it.

As shown in this process, themes can be applied to either public or private pages. Of course, you would be able to apply a theme on an individual page. "How?" you may ask. Locate a page, say "Home", and click on it. You would see the Look and Feel link. By selecting the Look and Feel link, you would be able to apply themes to the current page individually.
Understanding Sites

Uploading a logo

As mentioned earlier, each site can have a logo as its enterprise logo. Thus, we can upload a logo as the enterprise logo of a site. If no logo has been uploaded, then the site would use the default enterprise logo for public and private pages.

Let’s say that you are going to upload a logo called BookStreet_logo.png on the pages of the site "Book Street". You may be wondering about how to upload the logo. The following are the steps that you can take. They are shown in the following screenshot as well:

Figure 7.8: Site logo settings

1. As a site administrator, go to Site Administrator Panel of the Book Street site. Click on Site Pages under Pages.
2. Select the public or private page for which you want to change the logo. Select Logo from the right-hand side menu.
3. Upload the file BookStreet_logo.png by clicking on the button Choose File.
4. Now, you will have the choice to have a logo and a Site Name on the public page. You need to enable the checkbox Show Site Name. By default, the checkbox Show Site Name is checked.
5. Click on the Save button.

Note that Logo can be applied for each site differently since logos are associated with public and private pages. For a site, public and private pages can have different logos too.
Merging pages

More interestingly, you would be able to configure the top-level public pages of the current site (any sites except the default one — Liferay) to merge with the top-level pages of the public pages of the Liferay site. Therefore, users can then navigate between the two sites more seamlessly.

Let's say that you need to merge the top-level public pages of the Liferay site into the public pages of the site "Book Street". You may ask, "how are we going to achieve it?"

The following are the steps:

1. As a site administrator, go to Site Administrator Panel of the Book Street site. Click on Site Pages under Pages.
2. Select the Public page | Advanced link; you would see a checkbox Merge Liferay public pages — enable it.
3. Save the changes.

Note that you can merge only the top-level public pages of the Liferay site into the public pages of the Book Street site.

In fact, the pages of the public pages of the Liferay site aren't copied to a target site. Only a link called mergeGuestPublicPages=true in the column typeSettings of the table Group_ was generated. When the link is set as mergeGuestPublicPages=false, the feature mergeGuestPublicPages would be disabled.

This "merging" of pages is not a "hard merge". Let's say that the site administrator has merged ten different sites on one portal and all enabled the Merge default site's public page option. Now, the portals keep track of currentScopeGroupId (the ID of the current site) and the previous scopeGroupId (the ID of the previously visited site). If the Merge default site's public pages option is enabled for either the current site or the previous site, the pages of the default site are merged into the pages of the other site.

SEO

What is SEO?

"Search engine optimization (SEO) is the process of improving the volume or quality of traffic to a web site from search engines via "natural" or unpaid ("organic" or "algorithmic") search results."

— wikipedia.org
Liferay provides the settings to optimize the page data and allows the indexes that crawl the page. You have the option to set the various meta tags for **Description**, **Keywords**, and **Robots**. Separate Robots could be set in the **Robots** section that let you tell indexing robots how frequently the page is updated and how it should be prioritized. Let's suppose that the page is set to localize and that Liferay allows generating canonical links by language.

In Liferay, each asset (web content article, blog entry, and so on) has a unique URL. From the search engine’s point of view, this will make your pages rank higher since any references to variations of a specific URL will all be considered references to the same page.

How to customize SEO? The sitemap protocol allows us to set the following parameters for each page of the website:

- **Include**: Yes, No
- **Page Priority**: A number from 0.0 to 1.0 indicating the priority of the page relative to other pages of the website
- **Change Frequency**: Always, Hourly, Daily, Weekly, Monthly, Yearly, Never

**Site templates and page templates**

Site Templates and page Templates are another most wonderful feature in Liferay Portal. We have already discussed in **Chapter 2**, **Setting Up a Home Page and Navigation Structure for the Intranet**, and **Chapter 3**, **Bringing in Users**, about the site templates and page templates. Over here, we will look into it in more in detail. However, it is difficult for users who want to just create a site and start collaborating. They have to first create a theme, define layouts, and add portlets. **Site Templates** would be a good tool in this case when creating websites with preconfigured pages which include layouts, portlets, and themes. The portlet **Site Templates** allows the portal administrator to define a set of site templates as predefined websites that the users will be able to choose from to create new websites.

As you have seen, you don't need to create new pages as blank. Instead, you would be able to apply the layout and portlets of preconfigured pages on newly created pages. **Page Templates** allows the portal administrator to define a set of page templates as predefined pages that the users will be able to choose from to create new pages.
Creating page templates

As we know, a page template is only available to the portal administrator. Let's log in as a portal administrator. In the control panel, select Page Templates under Sites.

1. Click on the Add button to create a new page template.
2. Input the name, say Publish Department, and with a suitable description.
3. Enable the Active checkbox so that the page template is in active mode.
4. Finally, save the settings.

Now you will be able to see Publish Department in the page template list. Once page templates are available, you need to add the layout and the portlets to the page template. Click on Publish Department from the page template list. You will be able to see Open Page Template below Configuration. Click on open page template; it will open in a new tab. Now apply the layout and also place the required portlets on the page.

Assigning permissions

As you have seen, Page Templates is available only via Control Panel. Therefore, in order to view Page Templates, you need to have the Access in Control Panel permission first. Let's assign the MB Topic Admin role to access the page template in control panel where Lotti is associated as a member.

To set the permission entitlements for Page Template, portal administrators need to define permissions in Roles. Under the Users section, click on Roles in Control Panel and locate MB Topic Admin. Select Define Permissions from the Action button beside MB Topic Admin. Search for Page Template; you will get the entitlement settings for Page Template:

- **Control Panel | Sites | Page Templates**: General Permissions, Resource Permissions (Page Template)

Let discuss each of them in detail.

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access in Control Panel</td>
<td>This provides the ability to access the portlet in control panel</td>
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<tr>
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<td>This provides the ability to configure the portlets</td>
</tr>
<tr>
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<td>This provides the ability to assign permissions</td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view</td>
</tr>
</tbody>
</table>
As shown in the following implementation, the user "Lotti Stein" would be able to access the Page Templates portlet under the category Sites of Control Panel:

1. Log in as a portal administrator. Since roles is only accessible by the Portal admin.
2. Click on Roles under the category Users of Control Panel.
3. Then, locate a role, say MB Topic Admin.
4. Then, click on the Define Permissions icon from the Actions menu on the right-hand side of the role. Now, search for Page Templates.
5. Click on the Control Panel: Site | Page Templates link and enable the Access checkboxes in Control Panel and View.
6. Click on the Save button.

Note that the MB Topic Admin role should be of the regular type.

After assigning general permissions on the portlet Page Templates, you can go deeper and assign permissions on page templates. The following table shows permissions on page templates. Generally, by default, this entitlement for page templates is assigned only to Portal Administrator. In our case, you can assign these entitlements to MB Topic Admin too.

Control Panel | Sites | Page Templates: Page Template

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delete</td>
<td>This provides the ability to delete the page template</td>
</tr>
<tr>
<td>Update</td>
<td>This provides the ability to update the page template</td>
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<tr>
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<td>This provides the ability to assign permissions</td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view</td>
</tr>
</tbody>
</table>
Applying page templates

Now you would be able to apply page templates when adding a new page (either a private page or a public page). When a page template has been applied, the page will have same page layout and portlets as that of the page template. How do we apply page templates? As shown in following set of steps and the screenshot, while adding a new page, page templates are available:

1. Click on the Add button from the dock bar menu, and select Page from the left-hand side panel.
2. Provide the Page name, say publishing, and then select Type (page type). You will be able to see different page types, for example, Empty Page, Blogs, Wiki, Panel, Publish Department, and so on. In our case, select Publish Department.
3. Finally, save the page.

Obviously, you can only apply page templates on new pages. In other words, page templates are unavailable for existing pages—neither public nor private pages.

Creating site templates

Site templates are preconfigured websites—either public pages or private pages with multiple pages, each with its own theme, layout template, portlets, and portlet configuration. Site templates can also contain content, document and media, recycle bin, and so on. Just as with any other sites, it has its own content scope. Fortunately, site templates change this scenario and reduce website creation time. In Chapter 6, Blogs, WYSIWYG Editors, and Social Networking, you created a Site Template for social networking. The Site Templates portlet allows the portal administrator to define new sites that are each created with the same default pages, portlets, and contents (both public pages and private pages). Site Templates are only accessed and managed by Portal administrator.

Let's create a Site Template called "Departments", as shown in the following steps.

1. Click on Site Template under the Site category of Control Panel.
2. Then, click on the Add button, enter a name for New Site Template in the Name input field (for example, Department).
3. Enter the description of the Site Template.
4. Leave the Active checkbox as default, uncheck Allow Site Administrators to modify the pages Associated with This site Template. By this, the administrator will not be able to modify the template.
5. Click on the Save button to save the inputs.
Managing site templates

Site templates are manageable. That is, you are able to add, delete, and update site templates to manage pages of site templates and, furthermore, to assign permissions if you have proper access rights. Similar to page templates, site templates are specified as a database table `LayoutSetPrototype` with the columns: `uuid`, `layoutSetPrototypeId`, `companyId`, `create date`, `modified date`, `name`, `description`, `settings`, and `active`. How does it work? Let's have a deep look at the management of site templates.

The following figure displays the list of site templates with actions:

![Figure 7.9: View Site Templates](image)

As shown in the previous screenshot, you would be able to edit and delete site templates and also assign permissions on site templates. When updating a site template, you would have a chance to update the name and description. Moreover, you would also be able to disable the Active checkbox, making the site template invisible to end users. Note that only active site templates would be enabled for end users.

When editing a site template, you would see a link called View Pages under the Configuration title. On clicking on the link, a new window will open with a URL, such as `/group/template-id/home`. It will display the Site Template Name "Department", with the applied default classic theme of Liferay. On this page, you will be able to apply your theme, add portlets, update portlets, update the page layout, and so on. Note that template-id is a pattern, that is, the keyword `template + Id`, where the ID would be the value of the column `layoutSetPrototypeId`. 

[356]
You can manage the site template by clicking on Action | Manage. It will redirect you to the site templates panel. The left-hand side panel menu contains the Pages, Content, and Configuration sections. The panel just likes a regular site. You can create pages of the site template into hierarchies, and when you create a site using the site template "department", all the pages and portlets in each page get copied from the site template to that site. By default, all the changes made in site templates get reflected on the site based on that template.

The following screenshot illustrates the Site Template Settings panel:

![Site Template Settings](image)

The Content section has a separate scope based on the site template. Any content that is created here is only available for that specific site template and the site associated with it. For example, when you create any web content inside the site template, it will be available inside the site template and the site using the same template.

The Configuration section allows you to set the settings for Site Template, Application Display Templates and Mobile Device.
Assigning permissions

As you have seen, Site Templates is available only via Control Panel. Therefore, in order to view Site Templates, you need to have the Access in Control Panel permission. Let's assign the MB Topic Admin role to access the site template in Control Panel, where Lotti is associated as a member.

To set the permission entitlements for Site Template, portal administrators need to define permissions in Roles. Under the Users section, click on Roles in Control Panel and locate MB Topic Admin. Select Define Permissions from the Action button beside MB Topic Admin. Search for Site Template; you will get the entitlement settings for Site Template:

- **Control Panel | Sites | Site Templates**: General Permissions, Resource Permissions (Site Template)
- **Site Administration | Configuration | Site Template Settings**: General Permissions

Let's discuss each of them in detail.

**Control Panel | Sites | Site Templates: General Permissions**

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<tr>
<td>Permission</td>
<td>This provides the ability to assign permissions</td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view</td>
</tr>
</tbody>
</table>

As shown in the following implementation, the user "Lotti Stein" would be able to access the portlet Site Templates under the category Sites of Control Panel:

1. Log in as a portal administrator since Roles is only accessible by the Portal admin.
2. Click on Roles under the category Users of Control Panel.
3. Then, locate a role, say MB Topic Admin.
4. Then, click on the Define Permissions icon from the Actions menu on the right-hand side of the role. Now, search for Site templates.
5. Click on Control Panel: Site | Site Templates link, enable the Access checkboxes in Control Panel and View.

6. Click on the Save button.

[Note that the role of MB Topic Admin should be of the regular type.]

After assigning general permissions on the portlet Site Templates, you can go deeper and assign permissions on page templates. The following table shows permissions on page templates. Generally, by default, this entitlement for the Site template is assigned only to Portal Administrator. In our case, you can assign these entitlements for MB Topic Admin, too.

**Control Panel | Sites | Site Templates: Site Template**

<table>
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<td>Update</td>
<td>This provides the ability to update the site template</td>
</tr>
<tr>
<td>Permission</td>
<td>This provides the ability to assign permissions</td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view</td>
</tr>
</tbody>
</table>

The preceding entitlements are for delete, update, permission, and view of site templates. Any role that has these entitlements will be able to delete and update the site templates. They can even set the permissions for the site templates. The View entitlement is for viewing the site templates.

**Site Administration | Configuration | Site Template Settings: General Permissions**

<table>
<thead>
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<th>Action</th>
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</tr>
</thead>
<tbody>
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<td>Access in Site Admin</td>
<td>This provides the ability to access the portlet in Site Administration</td>
</tr>
<tr>
<td>Add to Page</td>
<td>This provides the ability to add site template into the page</td>
</tr>
<tr>
<td>Configuration</td>
<td>This provides the ability to configure the portlets</td>
</tr>
<tr>
<td>Permission</td>
<td>This provides the ability to assign permissions</td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view</td>
</tr>
</tbody>
</table>
Understanding Sites

The preceding entitlements are to access the configurations and see whether they can be viewed and accessed in Control Panel and Site Administration.

Applying a site template
Let’s apply a site template while creating a site:

1. Go to Sites in Control Panel.
2. Click on the Add button and select "Departments".
3. Enter the name and description for the site, and, finally, save the settings.

The site will be created using the site template "Departments" with all the settings defined in site templates.

Bringing users into sites
As discussed earlier, you will have the ability to assign users to sites if you have proper access control. You will also be able to assign users to site roles for a given site. Moreover, users would have the ability to join or leave an open site. More interestingly, you would be able to request membership to a given site as a member, or you would be able to approve or deny membership requests as an owner of a given site. This section will bring users into sites.

Assigning users
The Liferay site allows the Site Administrator to manage user membership. A Site Administrator will able to assign individual users, groups, and organizations to the site. Let’s use the user membership in our case study; for instance, the user "Lotti Stein" isn't a member of the site Book Street yet. Now, as a site administrator, you want to assign the user "Lotti Stein" to the site "Book Street", as shown in the following screenshot:
1. Log in as the Site Administrator of the site “Book Street”.

2. Click on Admin | Users under the dock bar menu. Default Site Memberships will open in the Site Administrator panel.

3. Check that the site content is selected as Book Street. If not, you can also select the site from the top dropdown in the dock bar menu.

4. Once you are in the Membership page, you will be able to see the list of users and organization for a particular site, that is, the Summary tab.

5. Select the Users tab. You will be able to see the list of users associated with Book Street. Now click on the Assign Users link at the bottom.

6. Now, you will be able to view the same screenshot as Figure 7.11. Just enable the checkbox beside “Lotti Stein”.

7. Save the change.
Similarly, you would be able to assign users of organizations and/or user groups into a site indirectly.

- **Users**: This is about assigning individual selected users to a site
- **Organizations**: This is about assigning users of selected organizations to a site
- **User Groups**: This is about assigning users of selected user groups to a site

Note that if a user, say "Lotti Stein", has been assigned to a site via both Users and Organizations, only one record would be saved in the database. As you can see, this is a more flexible approach to assign users to a site.

### Assigning an organization

An organization with public or private pages needs to have a site associated with it. A site administrator can assign any organization to the site. Let's see the example to assign the "Marketing Department" organization to the "Book Street" site.

1. Log in as a Site Administrator of "Palm Tree".
2. Click on **Admin | Users** under the dock bar menu.

   ![Check that the site content is selected as Book Street.]

3. Upon selecting the Organization tab, you will be able to see the list of organizations associated with Book Street. Now, click on the **Assign Users** link at the bottom. You will get the list of organizations inside the portal.
4. Locate the organization that you would like to associate with Book Street, that is, Marketing Department. Now select the Marketing department organization.
5. Finally, save the settings.
Assigning organization to the "Book Street" site is simple; refer to the following screenshot to implement it:

![Figure 7.12: Assigning organizations](image)

**Assigning Groups**

The site administrator can assign a group to the site. In some cases, you might have to assign a group in the site so that all the users of the group are assigned to the site. Let's assign the "Managers" group to the site "Book Street":

1. Log in as a Site Administrator of the site' Palm Tree.
2. Click on **Admin | Users** under the dock bar menu.

Check that the site content is selected as Book Street.
3. Select the User Groups tab; you will be able to see the list of User Groups associated with Book Street. Now click on the Assign User Groups link at the bottom. You will get the list of user groups inside the portal.

4. Locate the users group that you would like to associate with Book Street, that is, manager, and select the checkbox.

5. Finally, save the settings.

To assign user groups to the site, refer to the following screenshot for the preceding example.

![Figure 7.13: Assigning User Groups](image)

Note that it's an advantage while implementing the enterprise intranet portal. You might be implementing the LDAP in which all the users are associated with some groups. While importing the users from LDAP, you just need to create user groups in the portal. Finally, map it with sites where you want all the users of that user's group to get access to that site.
Assigning site roles to Users and User Groups

As stated earlier, Assign User Roles allows us to assign site-scoped roles to users. By default, sites are created with three site-scoped roles: Site Administrator, Site Member, and Site Owner, as shown in Figure 7.14. In general, you can assign one or more of these roles to users in a site if you have proper access rights. The three roles are explained after this information box:

- **Site Administrator**: They are super users of the site but cannot make other users into a Site Administrator.
- **Site Owner**: They are super users of the site and can assign site roles to users.
- **Site Member**: All the members of the site get the site member role.

Generally speaking, there are two steps to assign site roles to users and user groups—to choose a role and to assign site roles to users and user groups. For example, the user "Lotti Stein" is a member of the site "Book Street". Now, as an administrator, you want to assign the user "Lotti Stein" to the Site Owner site role. How can we implement it? The following are sample steps:

1. Log in as the Site Administrator of the site "Book Street".
2. Click on Admin | Users under the dock bar menu. The default Site Memberships will open in the Site Administrator panel.
3. Check that the site content is selected as Book Street. You can also select the site from the top drop-down menu in the dock bar menu.
4. Once you are in the Membership page, you will able to see the list of users and organizations for a particular site, that is, the Summary tab.
5. In the users list, locate "Lotti Stein", click on the Action button beside the name, and select Assign Site Roles.
6. Now you will be able to select the role for "Lotti Stein", as shown in Figure 7.14.
7. Enable the checkbox next to site owner and click on the Update Associations button.
After assigning the site role to the user with the preceding steps, the following screenshot displays the default roles for Site:

![Site roles for users and user groups](image)

Figure 7.14: Site roles for users and user groups

Let's assign the roles to groups site-scoped in a different way.

1. Follow the preceding steps from 1–4.
2. Click on the **Add Site Role to** dropdown from the top tab. You will see two options: **Users** and **User Groups**.
3. Select **User Groups**, and you will land on the role page. Select the role, say **Site Owner**.
4. Now, you will be able to see the list of users who are assigned to the site owner under the **current** tab.
5. Click on the **Available** tab, which will list all the members of the site. From the list, enable the checkbox beside the user groups "Managers".
6. Finally click on the **Update Associations** button.

![Adding site roles to User Groups](image)

Figure 7.15: Adding site roles to User Groups
Note that even you can assign the site-scoped Role to the users, from users and Organizations by clicking on the Action button next to the user and selecting Edit. Now select the role from the right-hand side control, and finally, choose the site-scoped role for a particular user.

Creating teams

A team provides great flexibility to the site administrator in creating various sets/teams of users and permissions for site-specific functions. Teams are ad hoc groups of a site's users that do the same set of tasks. It provides the feature of providing permission to specific sets of users for a particular functionality on the site. Teams can be scoped for collecting permission within a single site.

The list of functions to assign a Site Team includes:

- Moderating the site's Wiki content, Message Boards threads, and so on
- Editing a specific page on the site and writing blogs

So, the Site Administrator can create a team with the name Moderator, which will assign the Moderator job in Wiki and Message Board.

Note that each site has its own scope. So, all the settings for a particular site will not be available to any other site. Also, the permissions defined for one site will not be available for other site settings.

But it's not the same case for User Groups. Once you define the custom role to a user group, the role will be available at the portal level and the same specific permission defined by it would only apply within the scope of a designated site.

Let's create a team "Moderator" for the Book Street site, the permission defined for it will be only available to the Book Street site only and no other site can have same permission:

1. Log in as a Site Administrator of the site "Book Street".
2. Click on Admin | Users under the dock bar menu. Select Site Teams from the Site Administrator panel.
3. Check that the site content is selected as Book Street. You can also select the site from the top dropdown in the dock bar menu.
4. Click on the Add Team button. Enter the team details—the name Moderator and the description Moderator Team.

5. Finally, save the team by clicking on the save button.

Site Teams is created as shown in the following screenshot. Each site team has actions, such as Edit, Permissions, Assign Members, and Delete. Site Teams can be managed by the Site Administrator.

Assigning users to a team

The Moderator team might need to assign users who have common interests to the team. So, let's add member/users to the Moderator team:

1. Follow the preceding steps 1–3.

2. A list of teams that has been created will be displayed. Locate the team Moderator and click on the Action button next to that team. See Figure 7.16.

3. Click on Assign Members and you will find the list of members in this team. For our example, there is no member for this team.

4. Let's assign users by selecting the Available tab, which will list all the members assigned to the "Book Street" site.

5. Select the users from the list and click on the Update Associates button.

Figure 7.16: Creating a team
The following screenshot illustrates the user association with a site team:

![Figure 7.17: Assigning users to Site Memberships](image)

Note that you can assign Users and User Groups to the team. The users and user groups should be already added to the particular site and only then the available users and user groups will be listed.

### Join

As mentioned in earlier chapters, the portal provides the ability to allow users to join an open site and become members of the site. For example, as a user, say "Lotti Stein", of the enterprise Palm Tree Publication, you're going to join the "Book Street" site. Let's simply do it in a sequence by following these steps:

1. Log in as a user, say "Lotti Stein".
2. Click on **Lotti Stein**, and from the drop-down menu, select **My Dashboard** under the dock bar menu.
3. In **My Dashboard**, you will find the **My Sites** portlet, with two tabs **"My Sites"** and **"Available Sites"**, where you would see a list of sites.
4. Under the **Available Sites** tab, locate a site, say "Book Street", and click on the icon **Join** on the right-hand side of the site. You would see that the icon **Join** has now become the icon **Leave**.
**Leave**

Site members can also leave the site in which they are already a member. For example, as a user, say "Lotti Stein", of the enterprise Palm Tree Publications, you are a member of the site "Book Street". For some reasons, you may want to leave this site. How do we achieve it? Let's do it in sequence by following these steps:

1. Log in as a user, say "Lotti Stein".
2. Click on Lotti Stein and from the drop-down menu, select My Dashboard under the dock bar menu.
3. In My Dashboard, you will find the My Sites portlet, with two tabs "My Sites" and "Available Sites", where you would see a list of sites.
4. Under the "My Sites" tab, locate a site, say Book Street, and click on the icon Leave from the Action button on the right-hand side. You would see that the Book Street site is removed from the My Sites tab. The Site will be available under the Available Sites tab, where the Book Street site shows the icon Join.

Users can join and leave an open site at will. To join a restricted site, a user has to be added by the site administrator. A user can also request to be added through the Sites section of Control Panel. A private site is similar to a restricted site but doesn't appear in the Sites section of Control Panel for users who aren't members.

**Requesting membership**

In a restricted site, users can request for membership and the site owners of a given restricted site would be able to view membership requests of the restricted site and then approve or deny membership requests. Of course, these membership request processes are only available for restricted sites. How do they work?

Let's create a case study. The Book Street site is an open site, and we can change the settings of a site to a restricted site. Simply go to site settings and change Member type to Restricted.

Now, as a user, "Lotti Stein" of the enterprise Palm Tree Publications, wants to be a member of a restricted site "Book Street". How can we set this up? Let's do it by following these steps:

1. Log in as a user, say "Lotti Stein".
2. Click on Lotti Stein, and from the drop-down menu, select My Dashboard under the dock bar menu.
3. In My Dashboard, you will find the My Sites portlet with two tabs "My Sites" and "Available Sites", where you would see a list of sites.
4. Under the "Available Sites" tab, locate a site, let's say "Book Street", and click on the Request Membership icon on the right-hand side of the site.

5. Then, input comments, such as "my favorite website", and click on the Save button to save the changes. Your membership request is pending, and you would see the icon Membership Requested next on the right-hand side of the site.

Note that once this membership request gets approved, the user "Lotti Stein" would see the icon Request Membership become the icon Leave. The following screenshot displays the request for membership that was made:

![Requesting membership to a restricted site](image)

Figure 7.18: Requesting membership to a restricted site
Of course, any users could send membership requests on any restricted sites. The site owner would handle these membership requests. For instance, a site owner, such as "Book Street", is going to handle membership requests on the restricted site, such as "Book Street". How do we accomplish it? Let's do it by following these steps:

1. Log in as a Site Administrator of the site "Book Street".
2. Click on Admin | Users under the dock bar menu. The default Site Memberships will open in the Site Administrator panel.
3. Check that the site content is selected as Book Street. You can also select the site from the top dropdown in the dock bar menu.
4. Once you are on the Membership page, you will be able to see the list of users and organizations for a particular site, that is, the Summary tab. You will also be able to see the message "There are 1 membership request pending." You can click on the link, or you would be able to see the View Membership Requests tab. Click on the tab and you can see a list of pending membership requests, if any, as shown in the following screenshot:

![Figure 7.19: View membership requests](image)

5. Locate a request, for example, "Lotti Stein", and click on the Reply icon on the right-hand side of the membership request.
6. Choose the status Approve or Deny. Let's say you selected Approve and input comments, say "Welcome".
7. Click on the Save button to save the inputs, or click on the Cancel button to discard inputs. You would be able to view the approved membership request or denied membership request.

Note that only the site owner has the ability to view membership requests in a given restricted site.
The tabs details under View Membership requests are as follows:

- **Pending**: This is a set of pending membership requests with Date, User, User Comments, and a Reply icon. The site owner would be able to approve or deny membership requests.

- **Approved**: This is a set of approved membership requests with Date, User, User Comments, Reply Date, Replier, and Reply Comments.

- **Denied**: This is a set of denied membership requests with Date, User, User Comments, Reply Date, Replier, and Reply Comments.

As shown in the preceding code, all membership requests of a given restricted site will go to the Pending tab first. Once the request has been approved, it will go to the Approval tab, and the user will be a member of the restricted site. Otherwise, once the request gets denied, it will go to the Denied tab, and the user will not be a member of the currently restricted site.

**What's happening?**

As stated earlier, the Site is available in Control Panel. What's happening? When membership requests are approved or denied, e-mails are sent to requestors. "How to set it up?" you may ask.

**Settings**

The portal sets the following properties in portal.properties by default:

```
sites.email.from.name=Joe Bloggs
sites.email.from.address=test@liferay.com
sites.email.membership.reply.subject=com/liferay/portlet/sites/dependencies/email_membership_reply_subject.tmpl
sites.email.membership.reply.body=com/liferay/portlet/sites/dependencies/email_membership_reply_body.tmpl
sites.email.membership.request.subject=com/liferay/portlet/sites/dependencies/email_membership_request_subject.tmpl
sites.email.membership.request.body=com/liferay/portlet/sites/dependencies/email_membership_request_body.tmpl
```

This code sets the e-mail FROM name via the property sites.email.from.name and the e-mail FROM address via the property sites.email.from.address. Of course, you can override them in portal-ext.properties.

E-mail notification settings for membership requests and replies are configurable too. Thus, the subject and body of the membership reply and request are specified as TMPL files. Obviously, you can customize these setting by overriding TMPL files in portal-ext.properties.
Assigning permissions

As discussed earlier, site management is available only in the Site Administration Panel. If a user, such as "Lotti Stein", was a member of a site, such as "Palm Tree", in the current portal instance, then the user would be able to access the Site Administration Panel, and they would have the ability to manage the pages of the current site Pages from the left-hand side panel. It is convenient to access sites and manage pages of the site. This is not a standard approach. Normally, the sites should be accessed through the Access in Control Panel permission action, and pages of a site should be managed via permission Pages. In this section, we're going to discuss permissions on a portlet and permission in a site.

Let's assign the MB Topic Admin role to access the site in control panel, where Lotti is associated as a member.

To set the permission entitlements for Site, portal administrators need to define permissions in Roles. Under the Users section, click on Roles in Control Panel and locate MB Topic Admin. Select Define Permissions from the Action button beside MB Topic Admin. After that, search for Site; you will get the entitlement settings for Site:

- **Control Panel** | **Sites** | **Sites**: General Permissions, Resource Permissions (Site).

Let's discuss each of them in detail:

### Control Panel | Sites | Sites: General Permissions

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access in Control Panel</td>
<td>This provides the ability to access the portlet in control panel</td>
</tr>
<tr>
<td>Configuration</td>
<td>This provides the ability to configure the portlets</td>
</tr>
<tr>
<td>Permission</td>
<td>This provides the ability to assign permissions.</td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view</td>
</tr>
</tbody>
</table>

Let's say the user "Lotti Stein" is a member of the role "MB Topic Admin" and a member of the "Book Street" site. As a portal administrator, you are required to grant the Access in Control Panel permission to the user "Lotti Stein" and grant the Add Pages permission too. How do we accomplish this? We do it by following these steps:

1. Log in as a portal administrator since Roles is only accessible by the Portal admin.
2. Click on Roles under the category Users of Control Panel.
3. Then, locate a role, say MB Topic Admin.
4. Then, click on the Define Permissions icon from the Actions menu on the right-hand side of the role. Now, search for Sites.
5. Click on Control Panel: Site | Site link and enable the Access checkboxes in Control Panel and View under general permissions.
6. Finally, save the changes.

From now on, users and the members of the role "MB Topic Admin" will have access to the Site in Control Panel. Follow this section to add pages.

**Control Panel | Sites | Sites: Resource Permissions | Site**

The role Site Owner can set up all permissions: Assign Members, Assign User Roles, Delete, Manage Announcements, Manage Archived Setups, Manage Pages, Manage Teams, Manage Staging, Permissions, Publish Staging, Update, and View. All permission actions are unsupported for the role Guest. The following table shows entitlement permissions on a site:

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Page</td>
<td>This provides the ability to add the portlet into the page</td>
</tr>
<tr>
<td>Add Page Variation</td>
<td>This provides the ability to add page variation on the page for staging</td>
</tr>
<tr>
<td>Add Site</td>
<td>This provides the ability to add site</td>
</tr>
<tr>
<td>Add Site Pages Variation</td>
<td>This provides the ability to add Site pages variation for staging</td>
</tr>
<tr>
<td>Assign Members</td>
<td>This provides the ability to assign members</td>
</tr>
<tr>
<td>Assign User Roles</td>
<td>This provides the ability to assign users to site roles</td>
</tr>
<tr>
<td>Configure Applications</td>
<td>This provides the ability to configure application</td>
</tr>
<tr>
<td>Delete</td>
<td>This provides the ability to delete the site</td>
</tr>
<tr>
<td>Export/Import Application Info</td>
<td>This provides the ability to export/import the application info</td>
</tr>
<tr>
<td>Export/Import Pages</td>
<td>This provides the ability to export/import the pages LAR</td>
</tr>
<tr>
<td>Go to Site Administration</td>
<td>This provides the ability to access Site Administration Panel</td>
</tr>
<tr>
<td>Manage Announcements</td>
<td>This provides the ability to manage announcements</td>
</tr>
</tbody>
</table>
Understanding Sites

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage Archived Setups</td>
<td>This provides the ability to manage archived setups</td>
</tr>
<tr>
<td>Manage Pages</td>
<td>This provides the ability to manage pages</td>
</tr>
<tr>
<td>Manage Staging</td>
<td>This provides the ability to manage staging pages</td>
</tr>
<tr>
<td>Manage Subsites</td>
<td>This provides the ability to manage sub sites</td>
</tr>
<tr>
<td>Manage Teams</td>
<td>This provides the ability to manage teams</td>
</tr>
<tr>
<td>Permissions</td>
<td>This provides the ability to assign permissions on the site</td>
</tr>
<tr>
<td>Preview in Device</td>
<td>This provides the ability to preview in Devices</td>
</tr>
<tr>
<td>Publish Staging</td>
<td>This provides the ability to publish staging pages</td>
</tr>
<tr>
<td>Publish to Remote</td>
<td>This provides the ability to publish to remote</td>
</tr>
<tr>
<td>Update</td>
<td>This provides the ability to update the site</td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view the site</td>
</tr>
<tr>
<td>View Members</td>
<td>This provides the ability to view members</td>
</tr>
<tr>
<td>View Staging</td>
<td>This provides the ability to view staging</td>
</tr>
</tbody>
</table>

Let's say the user "Lotti Stein" is a member of the role "MB Topic Admin" and a member of the "Book Street" site. As a portal administrator, you are required to grant permission to the user "Lotti Stein" and also grant the Add Pages and Manage Pages permissions. How do we accomplish this? We do it by following these steps:

1. Log in as a portal administrator since Roles is only accessible by Portal admin.
2. Click on Roles under the category Users of Control Panel.
3. Then, locate a role, say MB Topic Admin.
4. Then, click on the Define Permissions icon from the Actions menu on the right-hand side of the role. Now, search for Sites.
5. Enable the Manage Pages and Add Pages checkboxes.
6. Click on the Save button.

As shown in the preceding processes, it grants the Manage Pages permission for the role "MB Topic Admin" on all sites in the current portal instance. As a member of the role "MB Topic admin", "Lotti Stein" would see the Add icon in the dock bar menu, able to add pages to any site.
Advanced site settings

Whenever you build a portal, you need to configure a lot of settings so that it is easy for end users to trigger the portal URL and Sitemap for the search engine crawler and much more. Liferay provide advanced settings for the sites with many configuration features. Let's explore each of them one by one. All the advanced settings for the site are only accessible by the Site Administrator. So, log in as the Site Administrator of Palm Tree. Now, click on configuration under Admin | Site Administration from the dock bar menu. It will redirect you to the site settings page. You will be able to see links with different settings, which are described as follows:

- **Basic Information**: Details, Categorization, Site URL, and Site Template.
- **Search Engine Optimization**: Sitemap and Robots.
- **Advanced**: Default User Associations, Staging, Analytics, Content Sharing, and Recycle Bin
- **Miscellaneous**: Custom Fields and Display Settings

The following screenshot illustrates the Site settings; you will be able to see the right-hand side links, which are mentioned in the preceding list. We are going to describe each of them in detail.

![Figure 7.20: Site Settings](image)

[377]
• **Details:** The Site Administrator will be able to change the Site name, descriptions, and membership type of a Site. They can also make the site active or inactive and also set the parent site.

• **Categorization:** The Site Administrator will be able to set the tags and categories for the site.

• **Site URL:** The Site Administrator will be able to set the friendly URL and Virtual Hosts for the site. Let's discuss both in detail.
  
  ° **Friendly URL:** It allows the site administrator to manage the path of the site in the intranet portal's URL. It can be implemented in both public and private pages. Basically, the friendly URL should be human-readable and easy to understand so that it raw boosts the search and helps the SEO understand the URLs. It should be unique too. Friendly URLs for public pages and private pages are appended to `http://localhost:8080/web` and `http://localhost:8080/group` respectively. In our "Palm Tree" example, it should append `/palmtree`. Therefore, the public URL becomes `http://localhost:8080/web/palmtree`, and the private URL becomes `http://localhost:8080/group/palmtree`.

![Site URL settings](image-url)
Chapter 7

- **Virtual Host:** This allows the site administrator to define the domain name; it might be a full domain or subdomain. Basically, it helps users to navigate the portal easily. In Liferay, you can have multiple sites. Each site needs to set their virtual hosts to help the Liferay Portal server to understand and pick the site quickly.

For our example "Palm Tree", you need to create a domain name, say bookpub.com, and point it to the Liferay server. Now the DNS name bookpub.com needs to point to your portal's IP address. After that, you can enter bookpub.com:8080 in Virtual Host.

- **Site Template:**
  - Whenever you use the site template in your site, you will be able to see the details of the site template and a link between the site template and the site. There will be two checkboxes for **Active**, and **Site template** allows modifications to the template, which is used whether or not modifications to the template pages are allowed.

- **Sitemap:**
  - Liferay provides you with the unique feature of sitemap; it will generate the sitemap in one click. It uses the sitemap protocol to generate the sitemap. When you publish your site to the search engines provided (Google and Yahoo), their web crawlers will use the sitemap to index your site. This process is required to be done only once. The sitemap XML will be sent to the respective search engines and periodically crawl the sitemap once you have the initial request made. If you want to preview the sitemap XML, just click on the preview link for private pages and public pages.

- **Robots:**
  - The Site Administrator will be able to configure robots.txt rules for the domain. Before doing this, you must configure Virtual Host for the site. It provides you with the option for both public and private pages.

- **Default User Associations:**
  - The Site Administrator has the right to set default user associations for site roles and teams. It allows assigning new user members with default roles and teams for a particular site.
• **Staging:**
  
  Liferay provides you with the staging feature of a site where the Site Administrator can enable it. Once it is enabled, you can edit and revise a page behind the scenes and then publish it live. We will discuss this further in later chapters.

![Staging settings](image)

• **Analytics:**
  
  The Site Administrator can set Google Analytics for the site. Liferay provides seamless integration with Google Analytics, which is a free service. Once the Site Administrator sets the Google Analytics ID and the piwik script on every page, this code get added. Google Analytics lets you to do all the traffic analysis on your site. It tells you who visited the site, where the visitors are from, and what pages they most often visited.
Chapter 7

• **Content Sharing:**
  - Content sharing gives the feature of sharing the content with subsites, which can display content from this site. By default, this value is enabled. You can change it to disable; once you do that, immediately revoke content sharing from all subsites.

• **Recycle Bin:**
  - The Site Administrator has an option to enable/disable the Recycle Bin for your site. It even has an option to regulate the maximum age, that is, the number of days for which content can be stored in Recycle Bin until it is permanently deleted.

• **Custom Fields:**
  - A custom field is a way to add an attribute to a site in the portal. The Site Administrator has the right to edit the custom fields, which are already configured for the site resources. Custom Fields can be configured from **Control Panel | Configuration | Custom Fields**, from where you can add custom fields to different resources.

• **Display Settings:**
  - Display settings are there to configure the language options for your site. You can use the default language options, or you can define a custom default language.

### Application Display Templates

Liferay 6.2 introduced a new feature, the **Application Display Templates** (ADT) framework. The ADT framework allows the portal administrator to override default templates, eliminating the limitations to the way your site's content is displayed. ADT helps with ways to define custom display templates used to render asset-centric applications. Say, for example, we need to display assets in the asset publisher in different sizes or different fashions.

You can get more benefits from the ADT with respect to different scenarios. Let's take one use case: if you want to include social media buttons in the Wiki portlet for Facebook or Twitter, you can create a custom template and configure with the portlet. The custom template wraps the skin of your portlet and provides you with unlimited control over its appearance and functionality in your portlet.
Note that the ADT is always associated with the site where the
custom template will reside. Set the ADT in the global context
and make your template available across all sites. In the global
context, you will have a sample ADT template for reference.

Let's create an ADT for the Palm Tree site. In the Site Administrator Panel, select
**Application Display Templates** from the left-hand side menu.

1. On clicking on the **Add** button, a drop-down menu will appear with different
   resources, such as **Asset Publisher template**, **Blogs Template**, **Categories
   Navigation Template**, **Document and Media Template**, **Site Map Template,**
   **Tags Navigation Template**, and **Wiki Template**.

2. Select **Document and Media Template** and input the name "Carousel", the
   language "FreeMarker", and the description "Carousel for Home page".

3. In the right-hand side script box, paste the following code:

```html
  <#assign aui = taglibLiferayHash["/WEB-INF/tld/aui.tld"] /> 
  <#assign liferay_portlet = taglibLiferayHash["/WEB-INF/tld/ 
  liferay-portlet.tld"] /> 
  <#if entries?has_content>
    <style>
      #<@liferay_portlet.namespace />carousel .carousel-item
      { 
        background-color: #000; 
        height: 250px; 
        overflow: hidden; 
        text-align: center; 
        width: 700px; 
      }
    #<@liferay_portlet.namespace />carousel .carousel-item img {
      max-height: 250px; 
      max-width: 700px; 
    }
  </style>
  <div id="<@liferay_portlet.namespace />carousel">
    #$assign imageMimeTypes = propsUtil.getArray("dl.file.
      entry.preview.image.mime.types") />
    <$list entries as entry>
      <$if imageMimeTypes?seqcontains(entry.getMimeType()) >
        <$div class="carousel-item">
          <$img src="${dlUtil.getPreviewURL(entry, entry.
            getFileVersion(), themeDisplay, ")"}" />
```
4. Finally, save the ADT.

The following screenshot displays the ADT list in Palm Tree:

![Application Display Templates](image)

Figure 7.23: ADT settings

Once the ADT is saved, you can manage your ADT using the **Action** button:

- **Edit**: You can update the template
- **Permissions**: You can set the permissions from Delete, update permissions, and finally view for the ADT
- **Copy**: This lets you make a copy of the ADT
- **Delete**: This allows you to delete the ADT
Now, we need to enable the ADT for the portlet to configure our template. Let's place the Media Gallery portlet on the home page through Add | Content and Applications | Applications | Content Management | Media Gallery.

1. In the media gallery portlet, select Configuration from the Gear icon in the top-right corner of the portlet.
2. In Configuration, enable the Show Action and Show Folder Menu display settings. Disable Show Navigation Links and Show Search in display settings. Also, disable Enable Ratings and Enable Comments ratings in the ratings settings. Finally, save and close the popup.
3. Upload images in Documents and Media.
4. Finally, you will be able to see the carousel on the home page.

The following screenshot shows the carousel on the home page using the ADT framework in the Document and Media portlet:

![Figure 7.24: The ADT carousel slideshow](image)

Finally, you created a carousel slideshow by transforming the Media Gallery portlet.
Liferay Social Activity

As we have seen, Liferay provides user interaction on your portal through different applications, such as Message Boards, Wikis, and Blogs. It's better to know which users are contributing value and which users are not. Liferay Social Activity allows you to tweak the measurements used to calculate user involvement within a site. Contribution and participation values determine the reward value of an action. Refer to the following screenshot for better understanding:

![Social Activity Screenshot](image)

Figure 7.25: Social Activity
Different site instances can have separate Social Activity configurations. There are three type of track metrics provided by social activity, which helps us to determine the user involvement in the application, such as Participation, Contribution, and Popularity (for the asset involvement). The Site Administrator can enable social activity from Site Administrator Panel | Configuration section | Social Activity. Let's enable the Blogs Entry contents for social activity. Social Activity is set on the basics of the actions performed on the application by the user. In Blogs Entry, different actions, such as Adds a Blog, Adds a Comments, Read a Blog, Subscribes to a Blogs, Unsubscribes from a Blog, Updates a Blog, and last but not least Votes on a Blog. You need to set the point's values and limits on several actions for blogs. Refer to the following screenshot for Adds a Comments on blogs; when adding a comment, you can set two points for participation and two points for contribution. Points can be selected from the drop-down selection box. The limit can be set by clicking the limit link from the top-right, which provides a few more fields to set the limit for contribution and popularity. You can set the limit per asset for times a day, times, and times per period, which you can select from the dropdown. Even you can set the participation limit for an asset.

![Figure 7.26: Social Activity](image)

If you add the points for Adds a Blog, say something like two points for participation and five points for contribution, the asset popularity gets five points. When the users add a new blog entry, they receive five contribution points and the asset receives five popularity points. But in Votes on a Blog, blog entries benefit from all the contribution points, which go to the original asset creator, and all the popularity points go to the original assets since no creation action has taken place.
Chapter 7

The primary purpose of Social Activity is to track the users who regularly contribute to the portal and participate in the discussion and recognize them. You can view the user's ranks in the User Statistics portlet. The user statistics portlet provides configuration to set the rankings with different checkboxes.

- **Rank by Contribution**: Ranks are calculated on the basis of the user's contribution score
- **Rank by Participation**: Ranks are calculated on the basis of the user's participation score
- **Show Header Text**: This allows you to define whether to show the title or only the rankings
- **Show Totals**: This toggles the display of the user's activity score.
- **Display Additional Activity Counters**: This provides other additional information next to the user's name—the number of comments on the assets, and so on

The Social Activity portlet is a robust application and is valuable for community-driven content creation. It's make it easier for us to recognize the users based on their activities.

**Workflow Configuration**

Liferay's Kaleo workflow engine is available in Marketplace for CE and EE versions of Liferay 6.2. It comes with Community Edition of the Tomcat bundle. Once you install it, it will provide you with a Workflow link under configuration. It comes with a sample workflow, that is, Single Approver Workflow. Refer to the following screenshot for better understanding.

![Workflow in Control Panel](image)

Figure 7.27: Workflow in Control Panel
In the preceding interface, you can upload a new workflow definition by clicking on the **Upload Definition** link. There are the following three tab views:

- **Definitions**: This lists all the uploaded workflows
- **Default Configuration**: This allows you to set the default workflow for different resources (**Page Revision**, **User**, **Blogs Entry**, **Web Content Article**, **Comments**, **Message Boards Message**, and **Wiki Page**) for a single portal instance
- **Submissions**: This provides a list of all the jobs pending and completed through the workflow

We will see Workflow Configuration in detail in *Chapter 10, Marketplace, Social Office, and Audience Targeting*.

The Site Administrator will also be able to configure the workflow from the Site Administrator panel by clicking on **Workflow Configuration** under the **Configuration** section in the left-hand side panel. Refer to the following screenshot to configure the workflow for Web Content Article:

![Workflow Configuration in Site Administration Panel](image)

Figure 7.28: Workflow Configuration in Site Administration Panel
If you see the preceding screenshot, you can select the workflow for different resources for a site level. Now you can select the workflow for Web Content Article with Single Approval Workflow (the latest version copy).

Note that the Kaleo workflow engine maintains the versioning of each workflow definition and creates a new copy whenever you do any changes in the file.

Once you have configured the workflow for the Web Content Article resource and saved it, the workflow will be implemented to Web Content Article.

Whenever you create any new web content article, you need to click on the Submit for Publication button, which will start the workflow. Approvers will get the notification and they need to approve it to allow the web content to be published.

**Mobile Device Families**
Mobile Device Families manages the configuration of the portal behaviors on different devices, such as mobile phones and tablets. The Site Administrator can configure the mobile device families with rules to alter the behavior of the portal on the different devices. It need to be configured at both the Site and Page levels with any number of mobile device families (all Android devices and all iOS tablets). Prioritization can be set on families to determine which one applies to a given page request.

Liferay Marketplace has a plugin called Device Recognition, which allows you to recognize devices. WURFL is integrated with the plugin, which basically has an open source database licensed with the AGPLv3 license. You need to have a mobile database deployed to make the mobile device rules get implemented.

Note that if you want to make all the sites in the portal have mobile device rules set, then you can configure the Global Site. Navigate to Control Panel | Sites | Global.

Let's set the mobile device families for all the Android families by following these steps:

1. Log in as the site administrator, click on Admin, and select the configuration from the dropdown on the dock bar menu.
2. Select Mobile Device Families from the left-hand side panel.
3. Click on the Add Device Family button, which will open a form.
4. Fill in the name and description, say **All Android Families** and **All Android families smart phone** respectively.

5. Click on the **Save** button.

After you click on the **Save** button, you will see a new link, **Manage Classification Rules**, appear. Refer to the following screenshot:

![Figure 7.29: Mobile Device Families configuration in Site Administration Panel](image)

Now, on clicking on Manage Classification Rules, you will be redirected to a page where you need to configure the rule for Android mobile phones. Refer to **Figure 7.30**. Input **name**, **description**, **Operating System**, and **Device Type** (select other devices since we are creating the rule for mobile phones and not for tablets). You need to input the device's **Physical Screen Size** and **Screen Resolution**. Finally, click on the **Save** button, and we are done with creating a rule for mobile devices.

A classification rule specifies the characteristics of the devices that belong to a device family. Each family can have several classification rules.
If there is no device recognition provider installed, it will display the message at the top, saying **There is no device recognition provider installed. It will not be possible to determine the characteristics of the devices accessing the portal. Please contact the portal administrator or install it from the Liferay Marketplace.**

Figure 7.30: Manage classification rule for mobile device families in Site Administration Panel
Now we have to make the page redirect to our mobile device rule. Click on **Site Page** under **Pages** on the left-hand side panel. Click on **Mobile Device Rules** from the right-hand side panel, and then click on the **Select Device Family** button. A pop-up window will be open to allow you to choose **Device Families**, which we have created recently. Refer to the following screenshot to configure the page.

![Site Pages](image)

In the preceding screenshot, you selected the **All Android Families** device rule. Each rule will have Action associated, which is as follows:

- **Manage Actions**: This allows you to set the action for a particular device rule by creating the action and linking the type for the device rule, such as **Redirect to URL**, **Layout Template Modification**, **Theme Modification**, and **Redirect to Site**.
- **Permission**: This allows you to set the permissions for the device rule.
- **Delete**: This allows you to delete the device rule associated with a page.

Finally, when users access the site from their Android mobile, it will call **Mobile Device Rules** and proceed as per the actions defined.
Summary

This chapter introduced you to advanced settings of Site, managing site with different actions, such as editing, deleting, searching, and so on. It also helps us to understand the permissions settings for sites. You learned how to create Site Templates and Page Templates with the permissions settings too. You have seen how to assign the users in the site and set the roles for different users. Creating a team was a nice experience, which gave the Site Administrator more flexibility to work with the users and create a prefect group for an organization. You learned how to create work on the advanced settings of the sites, which we will see more in detail in the coming chapters. This chapter has also introduced you to the new feature of Liferay 6.2, the Application Display Templates (ADT) framework. Using the ADT, we completed one live example too. You also learned Social Activity to rank users based on their contribution toward different resources. You also saw how to enable the workflow configuration for the web content article resource. We have also done the configuration of Mobile Device Families for a particular site page. In the next chapter, you are going to learn about Document and Media and Liferay Sync.
In an organization, an intranet portal should have the feature of document management so that the organization can maintain the documents in the portal itself. In an intranet portal of the enterprise Palm Tree Publications, you are going to implement document management. In this chapter, you are going to learn how to use Documents and Media Library. Liferay 6.2 Documents and Media Library has the ability to sort files online using the same type of structure that you use to store locally. The best part is that you can use it to store files of any type, use it as virtual share drive, and even mount and browse external repositories. In this chapter, you will learn in detail about the Documents and Media portlet, Media Gallery portlet, and Documents and Media Display portlet.

The Document and Media Library has many other features and settings, which you will explore in this chapter, such as Document Type and Metadata Sets; Alternative File Repository Options using an External Repositories example (Alfresco repositories); Microsoft Office Integration; and Automatic Previews and Metadata. In Liferay 6.2, these document types and media settings have given excellent support to the whole documents and media portlet.

In this chapter, Liferay Sync will be discussed in detail. This is a unique feature in Liferay that allows you to automatically synchronize the entire document with your local filesystem.

This chapter will also discuss how to configure workflows with the documents and media portlet.
By the end of this chapter, you will have learned:

- How to set up the documents and media
- How to set up document types and metadata sets
- About the details of the Media Gallery portlet
- About the different settings in the documents and media portlet
- How to set up the workflow on documents and media
- How to install and configure Liferay Sync
- How to integrate Liferay with the Alfresco CMS

**Documents and Media**

The Documents and Media portlet (portlet id 20) is basically available in the Site Administration panel and in the dock bar too. The Documents and Media portlet is non-instanceable, which means that in a page, only one portlet can be hosted. In the same site scope, documents and media will have the same documents since it's sharing the same dataset.

As a site administrator, you would be able to explore the Documents and Media portlet in the Site Administrator panel. Let’s log in as the Site Administrator and click on content in Admin | Site Administration from the dock bar and then select Documents and Media.

The following screenshot shows the Documents and Media portlet with images uploaded into it:

![Figure 8.1: The Documents and Media portlet](image)

The Documents and media portlet has the fine filtering feature for end user requirements.
Managing documents and media

Documents and media can be managed by the Site Administrator. Liferay 6.2 has made document management very user friendly and easy to maintain.

In the preceding screenshot, there is the links section with the names Home, Recent, Mine, and Browse by Type; these are all filters. Home is the default folder, which contains the folders and documents. Recent displays all documents that have been recently uploaded, edited, or downloaded. Mine displays all the documents uploaded by you. Browse by Type shows the options of the document type. If you select any document type, it will fetch all the documents related to that document type. Let's start to work with Documents and Media.

Let's discuss the menu at the top of the Documents and Media portlet that contains the Add, Sort By, and Manage buttons. Beside that, there is a search textbox with a search button, which allows you to search for a file from a list. There is also a button which allows you to switch the view for the listed documents. These views are icon view, descriptive view, and list view.

There is a Subscribe link in the top-right corner. It will be visible in all the folders. When you click on the Subscribe link, it subscribes you to the folder you are currently viewing, and you will receive e-mail notifications whenever any actions take place in the folder, say adding, editing, or deleting files.

The following are the options under the Add menu button:

- **Folder**: This allows you to create a new folder in your portlet's filesystem.
- **Shortcut**: This allows you to create a shortcut to any document that you have read access for. Also, you can specify who can access the original document through a shortcut.
- **Repository**: Liferay 6.1 introduced this new feature. It allows you to add an entirely new repository to your Documents and Media portlet. While creating the repository, you have to specify the repository type and choose an ID, even the AtomPub protocol, if you are using it.
- **Multiple Documents**: This allows you to upload multiple documents at one go.
- **Basic Documents**: This allows you to upload a single document. By default, basic documents are not described by any metadata sets.
The rest of the options in the Add menu are default document types, such as Contract, Marketing Banner, Online Training, Sales Presentation, and Publisher document, which are each described by a unique metadata set. Whenever you add a file associated with any document type, you will be provided with the file upload form with additional fields for metadata in a specific document type use case. Let's discuss the Contract document type for example.

**Contract**

The Contract document type is intended to be used to describe legal contracts. It has specific metadata for Contract documents, such as the Effective Date, Expiration Date, Contract Type, Status, Legal reviewer, Signing Authority, and Deal Name fields.

So, whenever you create any new document type for your use case, it will also appear under the Add menu. After that, when you want to upload a file using the specific document type, you need to fill in all the metadata.

Liferay 6.2 provides you with the drag and drop upload feature. You can upload the file just by dragging it from your local filesystem to the Documents and Media folder location. It will upload the file with the same filename as the File Title and is available instantly.

Liferay Documents and Media provides you with a sort feature, which allows you to sort the listed document in different ways. The following are the options for sorting under the Sort By button:

- **Title**: This allows you to sort the document by title alphabetically
- **Create Date**: This allows you to sort the document by creation date
- **Modified Date**: This allows you to sort the document by the last time they were modified
- **Downloads**: This allows you to sort the document by the number of times they were downloaded
- **Size**: This allows you to sort the document by file size

After Sort By, you can see the Manage menu button. It allows you to view details of document types and metadata sets. Let's discuss it:

- **Document Types**: This allows the viewing of all the document types. Also, you can create a new Document Type.
- **Metadata Sets**: It displays a list of defined metadata sets as well as their portal IDs. You can also create new Metadata Sets.
We are going to discuss Document Type and Metadata Sets further in the coming sections.

**Adding folders**

In our filesystem, we generally maintain our files in different folder structures. In the same way, in intranet portals, different department folders can be maintained for their documents. In our use case, let's create a folder with the name **Editorial Department**, which will contain two subfolders with the names **Editorial Germany** and **Editorial US**:

1. Log in as the Site Administrator of the site Palm Tree.
2. Click on **Content** in Admin | **Site Administration** from the dock bar menu.
3. Select **Documents and Media** from the left-hand side panel.
4. In Documents and Media, select the folder from the **Add** dropdown.
5. Fill in the name **Editorial Department** and the description **Editorial department folder**.
6. Keep the default permission settings, that is, **Anyone Guest Role**. If you need to change the permission, click on the **More Options** link to do so.
7. Finally, **Save** it.

The folder with the name **Editorial Department** has been created. Now create a subfolder inside the **Editorial Department** folder. Click on the **Editorial Department** folder first, then:

1. Select the folder from the **Add** drop down.
2. Fill in the name **Editorial Germany** and the description **Editorial Germany folder**.
3. Keep the default permission settings, that is, **Anyone Guest Role**. If you need to change the permission, click on the **More Options** link to change the permission.
4. Finally, save it.
Follow the same steps for the Editorial US folder. The following screenshot shows the two folders Editorial Germany and Editorial US inside Editorial Department. Also, it shows the Actions dropdown in the folder too.

![Folder and subfolders inside Documents and Media](image)

In the preceding screenshot, you can see the folder structure with Editorial Department having two subfolders. Each folder has an Action dropdown with Edit, Move, Permissions, Move to the Recycle Bin, Add Subfolder, and Access from Desktop. Let's know each action in brief.

- **Edit**: This lets you edit the folder settings and also allows you to enable the workflow for documents and media. See the Enabling the workflow in Documents and Media section for more details.
- **Move**: This lets you move the folder to a new location.
- **Permissions**: This allows you to configure folder-specific permissions for the folder.
- **Move to the Recycle Bin**: This lets you remove the folder from the Documents and Media library.
- **Add Subfolder**: This allows you to create a subfolder for a particular folder without going into the folder.
- **Access from Desktop**: This allows you to access the folder directly from the explorer of your desktop operating system, basically using the WebDAV URL `http://localhost:8080/webdav/palmtree/document_library/Editorial%20Department/Editorial%20US`.
Editing folders
As mentioned earlier, we can edit the folder settings. Let’s change the description of the Editorial Germany folder:

1. Click on the Edit action from the Action dropdown of the Editorial Germany folder.
2. Now you can change the description of the folder from Editorial Germany folder to This folder is for Editorial Germany.
3. Here, you will see Document Type Restrictions and Workflow settings too. These settings are used to restrict certain document types in the folder. Also, we can set the workflow configuration for the folder too. We will discuss this in detail in the coming section.
4. Finally, save the changes.

Editing a folder has a setting for workflow, which we will discuss in the coming section. The following screenshot shows the folder being edited:

![Figure 8.3: Editing a folder](image)

Figure 8.3: Editing a folder
Moving folders

Sometimes, users create folders wrongly, which need to be moved to their respective locations or removed completely. Liferay 6.2 has the feature to move the folder to its respective location. Let’s see how we can move the folder to another location:

1. Click on the **Move** action from the **Action** dropdown of the *Editorial Germany* folder.
2. Now you can select the desired parent folder location by selecting the select button. You will get the pop-up window where you can choose the parent folder.
3. Finally, click on the **Move** button.

This is a nice feature for document management. The following screenshot shows the illustration of the moving of the *Editorial Germany* folder from *Editorial Department* to some other folder:

![Figure 8.4: Moving folders](image)

Note that moving a folder also moves the files in that folder. You can move folders to any parent folder location for which you have the required permissions.

In the Palm Tree intranet portal, the users will upload the documents in their respective folders. Let’s see the case study of adding files/documents to the *Editorial Germany* folder.
Adding files

In Liferay 6.2, we have the freedom to upload any kind of file extension. Liferay 6.2 reads most of them very easily and also allows the user to preview the document in the document preview panel. Let's upload an Editorial Department.pdf file into the Editorial Germany folder.

1. In Documents and Media, click on the Editorial Germany folder.
2. Click on Basic Document from the Add button.
3. A new document page will open. Here, you can select the document and publish it.
4. Choose the file from your local system.
5. Fill in the Title and Description of the document, say Editorial Document and Editorial department document project, respectively.
6. Set the Categorization and Tags for the document.
7. Leave the default Related Assets and Permissions settings.
8. Finally, publish the document by clicking on the Publish button.

You can see the following screenshot for uploading the file in the Documents and Media library:

![Figure 8.5: Adding a file](image)
Once you publish the document, it creates the document in the Documents and Media library. After publishing, you will be able to view the document in Documents and Media. The following screenshot displays the document inside Documents and Media with the actions. Let's discuss the actions in brief:

![Figure 8.6: A file inside Documents and Media](image)

All documents created in Documents and Media will have actions, which are used to update the document and its settings. In the preceding screenshot, the actions that you can perform on the documents are as follows:

- **Download**: This allows you to download the document.
- **Edit**: This allows you to change the content of a document; point it to a different file; change its title, description, or document type; or add tags, categories, or related assets.
- **Move**: This allows you to move the file to a desired location in the portal.
- **Checkout**: This allows you to safely work on the document while you are editing and prevent other users from modifying the same document. Once your work is done, you can check the document back in.
- **Permissions**: This allows you to set the file-specific permission on the document.
- **Move to the Recycle Bin**: This allows you to remove the documents from Documents and Media.
Now let's view the document by clicking on the document itself. You will be able to see that the document opens with a lot of details, such as its version number, version history, and status, and also who uploaded it and who last edited it. The following screenshot will describe all the fields clearly:

![Figure 8.7: View a file](image)

Liferay has the beauty of displaying the document inside Documents and Media. Most of the files are supported, such as .pdf, .png, .txt, .doc, .xml, and more. In the preceding screenshot, you will see details of the file and also its actions. We have already discussed the same actions. You will be able to see the document title, by which user the file got uploaded, and when it was uploaded. You can even put the rating/vote for the document by setting the **Averages** (stars); you can see the file description. The tags are also visible. The document view section can be zoomed in to read the file content clearly. If the comments section is enabled, you can view comments, add comments, or subscribe to comments.
Note that Comments are enabled by default.

If you see the right-hand side information, it provides metadata of the document, such as versions, last updated by user, status, description of the file, download link, WebDAV URL, content type, author, last saved date, and version history.

**Editing files**

You might be required to edit the file sometimes. You can click on the Edit button from the top menu of the document view page. Let's change the file title to Editorial project document.

1. Click on the Edit button from the top menu of the document:

![Figure 8.8: Edit File](image)
2. The edit from page file will be open. Change the file's title to Editorial project document.

3. Finally, save it.

Once it's saved, you will see that the file's title has been changed to Editorial project document.

Checkout and checkin

In the document management system, checkout and checkin is an essential feature. Liferay provides us with the best implementation on the Document and Media library. Let's have a use case where the Palm Tree administrator wants to edit the Editorial project document file and doesn't want another user to overwrite the document on which they are working. Lotti Stein, at the same time, tries to access the document and also tries to edit it.

1. Log in as the Site Administrator of Palm Tree.

2. Click on Content from Admin | Site Administration from the dock bar menu.

3. Select Documents and Media from the left-hand side panel.


5. The document will open in the document view. Click on the Checkout button from the top menu.

6. After clicking on it, the message You now have a lock on this document. No one else can edit this document until you unlock it. This lock will automatically expire in 1 day. will be displayed.

7. Now you can edit and upload the new document. For the duration of time for which you are working on the document, no other user can work on the same document.

8. Let's log in as Lotti Stein and go to the Document and Media page from the navigation menu bar, which we created before.

9. The Document and Media portlet is already placed in the page.


11. Lotti will also see an error (red) message You cannot modify this document because it was locked by Palm Trees Admin on 4/16/15 7:36 AM. It totally depends on the permissions that Lotti has. If Lotti doesn't have the permission to edit the file, she will not get any message. If Lotti has the permission to do Override Checkout, she will see the same message that Palm Tree Admin received.
The checkout feature gave you the privilege to work on the file independently. Now once your work is completed on the file, you can click on the **Save and Checkin** button in the edits form. The following screenshot displays the document view after checkout:

![Figure 8.9: File checkout](image-url)

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**Document and Media Management**

The checkout feature gave you the privilege to work on the file independently. Now once your work is completed on the file, you can click on the **Save and Checkin** button in the edits form. The following screenshot displays the document view after checkout:
The version of the document has changed to **Version PWC**. Liferay creates a draft copy of the file that is called **personal working copy** (PWC).

Note that you can cancel the checkout by simply clicking on the **Cancel Checkout** button.

### Adding a shortcut

Liferay has a nice feature called Add Shortcut. You can add a document shortcut from different sites, but you should have the read access permission on the document. Let’s create a shortcut document inside the Palm Tree site. We will access a document from the Editorial Germany site and create a shortcut for it:

1. Click on the **Add** button and select **Shortcut**.
2. You will be redirected to the **New File Shortcut** page; select the **Site** and **Document**:

   ![New File Shortcut](image)

   **Figure 8.10: Adding a shortcut**

3. Finally, Save it.

   Note that the permission set on the shortcut enables others to access the original document through the shortcut.
Now you can see the shortcut file with the name *Project Document* has been created in the *Editorial Germany* folder under *Palm Tree | Document and Media:

![Image](image1.png)

Figure 8.11: Adding a shortcut file

The shortcut feature adds value to document management. You can also set the permissions entitlements on the shortcut. In the next section, it will be discussed in detail.

### Assigning permissions

The Document and Media portlet can be accessed inside *Site Administration Panel* and also outside (pages). The Site Member won't have the permission to add and edit files in the Document and Media portlet, but they may have access to view the file.

Let's provide the role entitlements for the *MB Topic Admin* role that allows the user to edit a document and where Lotti is associated as a member.

To set the permission entitlements for *Document and Media*, the portal administrator needs to define permissions in roles. Under the *User* section, click on *Roles in Control Panel* and locate *MB Topic Admin*. Select *Define Permissions* from the *Action* button beside *MB Topic Admin*. Search for documents and media. You will get the entitlements setting for documents and media.
Permissions for Document and Media can be assigned under Site Administration | Content and Site Administration | Applications:

- Site Administration | Content: General Permissions, Resource Permissions (Documents), Document Folder, Document, Shortcut, and Document Type
- Site Administration | Applications: This has the same set of role entitlements

Let's discuss each of them in detail.

### General Permissions

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access in Site Administration</td>
<td>This provides the ability to access the portlet in site administration panel</td>
</tr>
<tr>
<td>Add Display Template</td>
<td>This provides the ability to add display template</td>
</tr>
<tr>
<td>Add to Page</td>
<td>This provides the ability to add portlet to page</td>
</tr>
<tr>
<td>Configuration</td>
<td>This provides the ability to configure the portlets</td>
</tr>
<tr>
<td>Permission</td>
<td>This provides the ability to assign permissions</td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view</td>
</tr>
</tbody>
</table>

General Permissions are defined as those that the users can enjoy most administrator rights for a particular application in the portal. Access in Site Administration entitlements are given to the users who have the Admin rights.

Whenever you give entitlements for the specific portlets, you have to be clear about the users' roles.

### Resource Permissions – documents

Resource Permissions defines what actions can be performed on resources displayed or managed from the preceding application. Basically, resources are any user-facing application in the portal, such as users, organization, sites, blogs, wikis, and so on.

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Documents</td>
<td>This provides the ability to add documents</td>
</tr>
<tr>
<td>Add Documents Type</td>
<td>This provides the ability to add documents types</td>
</tr>
<tr>
<td>Add Folder</td>
<td>This provides the ability to add folders</td>
</tr>
<tr>
<td>Add Repository</td>
<td>This provides the ability to add repositories</td>
</tr>
<tr>
<td>Add Shortcut</td>
<td>This provides the ability to add shortcuts</td>
</tr>
</tbody>
</table>
Document and Media Management

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Structure</td>
<td>This provides the ability to add structures</td>
</tr>
<tr>
<td>Permissions</td>
<td>This provides the ability to assign permissions</td>
</tr>
<tr>
<td>Subscribe</td>
<td>This provides the ability to subscribe</td>
</tr>
<tr>
<td>Update</td>
<td>This provides the ability to update the document</td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view</td>
</tr>
</tbody>
</table>

Documents folder

Permissions entitlements for the Documents folder are to access the folder and add a file to that folder. Even other actions can be given:

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access</td>
<td>This provides the ability to access the document folder</td>
</tr>
<tr>
<td>Add Documents</td>
<td>This provides the ability to add documents</td>
</tr>
<tr>
<td>Add Shortcut</td>
<td>This provides the ability to add shortcuts</td>
</tr>
<tr>
<td>Add Subfolder</td>
<td>This provides the ability to add subfolders</td>
</tr>
<tr>
<td>Delete</td>
<td>This provides the ability to delete</td>
</tr>
<tr>
<td>Permissions</td>
<td>This provides the ability to assign permissions</td>
</tr>
<tr>
<td>Update</td>
<td>This provides the ability to update the document</td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view</td>
</tr>
</tbody>
</table>

Access entitlements can be assigned to the role that needs to access the folder and needs the ability to add documents and subfolders.

Document

Permissions entitlements on the document are assigned from Site Administration | Content | Document. Also, discussions on the document entitlements can be assigned from here:

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Discussion</td>
<td>This provides the ability to add discussions on the document</td>
</tr>
<tr>
<td>Delete</td>
<td>This provides the ability to delete</td>
</tr>
<tr>
<td>Delete Discussion</td>
<td>This provides the ability to delete discussions on the document</td>
</tr>
<tr>
<td>Override Checkout</td>
<td>This provides the ability to override checkout on the documents</td>
</tr>
<tr>
<td>Permissions</td>
<td>This provides the ability to assign permissions</td>
</tr>
<tr>
<td>Update</td>
<td>This provides the ability to update the document</td>
</tr>
</tbody>
</table>
Let's say the user "Lotti Stein" is a member of the role "MB Topic Admin". As a portal administrator, you are required to grant the Update permission on the document for the user "Lotti Stein" and also grant the View permission. How do we accomplish this? We do it by following these steps:

1. Log in as a portal administrator since Roles are only accessible by the Portal admin.
2. Click on Roles under the category Users of Control Panel.
3. Then, locate a role, say MB Topic Admin.
4. Then, click on the Define Permissions icon from the Actions menu on the right-hand side of the role. Now, search for Documents and Media.
5. Click on Documents and Media from Site Administration | Content and enable the Update checkbox and View checkbox from the document.
6. Finally, save the changes.

From now on, users and members of the role "MB Topic Admin" will have the edit button enabled for documents.

**Shortcut**

Permission entitlements for shortcut files can be assigned to users to delete, update, view, and set the permission on the shortcut:

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delete</td>
<td>This provides the ability to delete the shortcut files</td>
</tr>
<tr>
<td>Permissions</td>
<td>This provides the ability to assign permissions</td>
</tr>
<tr>
<td>Update</td>
<td>This provides the ability to update the shortcut files</td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view</td>
</tr>
</tbody>
</table>
Document and Media Management

Document type
Permission entitlements for document type can be assigned to the users to delete, update, and configure the permission on the document type.

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delete</td>
<td>This provides the ability to delete</td>
</tr>
<tr>
<td>Permissions</td>
<td>This provides the ability to assign permissions</td>
</tr>
<tr>
<td>Update</td>
<td>This provides the ability to update the document</td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view</td>
</tr>
</tbody>
</table>

Documents and Media – configuration
As mentioned earlier, Documents and Media is available in Control Panel as well as Site Administration Panel. In both places, you will find the configuration for Documents and Media. In Site Administration Panel, select documents and media from the content. Select the Gear icon from the top-right corner and click on Configuration.

Even you can do the same configuration from the Document and Media portlet from any page by clicking on the Gear icon and selecting the configuration link.

Configuration has four tabs, Display Settings, Email Form, Document Added Email, and Document Updated Email.

Let's discuss Display Settings first. It has many settings, such as Root folder, Show Search, Maximum Entries to Display, Enable Related Assets, Display Style Views, Entries Listing for List Display Style, and Ratings. Let's discuss each of them:

- **Root folder**: This allows you to select the Root folder for documents and media.
- **Show Search**: You can enable and disable search in documents and media.
- **Maximum Entries to Display**: This allows you to set the maximum number of entries to display in the Documents and Media portlet.
- **Enable Related Assets**: This allows you to enable and disable related assets.
- **Display Style Views**: This allows multiple select for the display style views; currently, it has icon, descriptive, and list. You can deselect any one from them.
• **Entries Listings for List Display Style:** This allows multiple selects for the column headings for the documents listings display style. By default, Name, Size, Status, Downloads, and Action are set. You can also include Create Date and Modified Date.

• **Ratings:** You can enable the ratings and comment ratings for documents and media.

Refer to the following screenshot for display settings in the configuration popup:

![Figure 8.12: Documents and Media - Configuration | Display Settings](image_url)
The **Email From** tab is for setting the e-mail sender name and the sender e-mail address. The following screenshot displays the **Email From** tab with definitions of terms. The **Definitions of Terms** are defined, which are used to get site names and so on and input into the text field.

The **Document Added Email** settings are for sending notification e-mails while anyone is adding a file to an administrator. You can enable or disable the mail, change the mail subject, and change the mail body. You can use the definition of a team for the e-mail subject and body.
A **Document Added Email** settings screenshot is displayed here:

![Document Added Email Settings Screenshot](image)

Figure 8.14: Documents and Media Configuration – Document Added Email
Document Updated Email is a mail notification to the administrator when a file has been updated. You can enable and disable the mail notification. Also, you can change the mail subject and body. The following screenshot shows Document Updated Email:

![Document Updated Email](image)

Figure 8.15: Documents and Media - Configuration | Document Updated Email
When you configure the Document and Media portlet from the page, it will provide more options tabs, such as **Setup**, **Permissions**, **Communication**, **Sharing**, and **Scope**. It also provides the **Archive/Restore Setup** link in the top-right corner of the pop-up window. Let's discuss the aforementioned tabs in detail:

- **Setup**: This allows you to set up the documents and media configuration.
- **Permissions**: This allows you to set up the permissions for a portlet.
- **Communication**: This allows you to map and share parameters, such as `categoryId`, `nodeId`, `tag`, `nodeName`, `resetCur`, and `title` for inter-portlet communication. Refer to *Chapter 5, Understanding Wikis, Dynamic Data Lists, and Polls*, for more details.
- **Sharing**: This allows you to share the portlet with social media and websites.
- **Scope**: This allows you to set the scope of the portlet. Refer to *Chapter 5, Understanding Wikis, Dynamic Data Lists, and Polls*, for more details.
- **Archive/Restore Setup**: This allows you to archive the documents and media data for future reference. Once you have archived it, you can restore it whenever required. For more details, refer to *Chapter 4, Forums, Categorization, and Asset Publishing*.

### Understanding the import and export of documents

Liferay allows you to export and import portlet data for most of the out-of-the-box portlets, such as the Document and Media, Web Content, Blogs, Wiki, and Message Boards portlets. You can export and import data from a portlet by clicking on the **Gear** icon and selecting the **Export/Import** link. It will open a pop-up window for the **Export** and **Import** tabs. Let's discuss Export in detail.

Export has two tabs: **New Export Process** and **Current and Previous**.

- **New Export Process**: This allows you to export the `.lar` file, which includes all the configuration, content, and permissions on Documents and Media. Refer to the following screenshot for the Export interface.

  ![LAR](LAR is a Liferay Archive file, which is used to export and import data from one Liferay instance to another. Note that an **LAR** file can only be implemented on the same version of a Liferay server instance.)

  Note that an **LAR** file can only be implemented on the same version of a Liferay server instance.
• **Current and Previous**: This lists all the export .lar files generated currently and previously.

You can select the document by the date range, selecting the document folder, or individual documents.

Figure 8.16: Documents and Media - Export
Import also has two tabs: **New Import Process** and **Current and Previous**. Refer to the following screenshot. For importing, you can just drag and drop the .lar file or browse the .lar file from your local system. After selecting the LAR file, you will get a screen similar to the export screen. Select the appropriate content and permission and click on **Continue**.

![Documents and Media - Export / Import](image)

Figure 8.17: Documents and Media - Import

Finally, once done, it will be listed in the **Current and Previous** tab. You will find all the old and new import .lar file details in this tab.

**Extra settings for the Documents and Media portlet**

The Documents and Media library is so flexible that many settings are defined in `portal.properties`. As you saw earlier, the e-mail settings can also be set through `portal-ext.properties`.

Liferay has excellent portal configuration features, which allows you to do extensive customization for different applications/portlets:

```
dl.email.from.name=
dl.email.from.address=
dl.email.file.entry.added.enabled=true
dl.email.file.entry.added.subject=com/liferay/portlet/documentlibrary/dependencies/email_file_entry_added_subject.tmpl
```
Document and Media Management

dl.email.file.entry.added.body=com/liferay/portlet/documentlibrary/dependencies/email_file_entry_added_body.tmpl

dl.email.file.entry.updated.enabled=true
ndl.email.file.entry.updated.subject=com/liferay/portlet/documentlibrary/dependencies/email_file_entry_updated_subject.tmpl
dl.email.file.entry.updated.body=com/liferay/portlet/documentlibrary/dependencies/email_file_entry_updated_body.tmpl

The configuration settings for Email notification can be done in portal-ext.properties. As mentioned earlier, you can override these properties.

Liferay has a file storage system, which is mapped to the default folder; that is, dl.store.file.system.root.dir=${liferay.home}/data/document_library.

You can set the Amazon s3 bucket values too:

dl.store.s3.access.key=
dl.store.s3.secret.key=
dl.store.s3.bucket.name=

The Document library of Liferay is very strong, and you can override most of the settings through the UI as well as from the properties file. Document library file icons are also defined. If you want to add any icon, you need to override this key and add the image in the doc.gif:

dl.file.icons=.bmp,.css,.doc,.docx,.dot,.gif,.gz,.htm,.html,.jpeg,.jpg,.js,.lar,.odb,.odf,.odg,.ods,.odt,.pdf,.png,.ppt,.pptx,.rtf,.swf,.sxc,.sxi,.sxw,.tar,.tiff,.tgz,.txt,.vsd,.xls,.xlsx,.xml,.zip,.jrxml

File extensions defined as * will permit all the file extensions:

dl.file.extensions=*  

The settings dl.file.entry.open.in.ms.office.manual.check.in.required=true are there to force users to perform a checkin via the Document Library user interface when using the Open in MS Office feature. If set to false, the settings allow users to automatically do a checkin to the file upon closing the appropriate MS Office applications. The following property is set for the document version number. Setting this to 0 forces all updates to file entries to result in a new version. By default, it is set to 1.

dl.file.entry.version.policy=1
For image previews, the settings are as follows:

dl.file.entry.preview.image.mime.types=image/bmp,image/gif,image/jpeg,image/pjpeg,image/png,image/tiff,image/x-citrix-jpeg,image/x-citrix-png,image/x-ms-bmp,image/x-png,image/x-tiff

There are many more settings that you can override using `portal-ext.properties`.

**File repository**

In documents and media, the files are stored in the filesystem of the server on which it's running. As mentioned previously, it is stored in the folder location of the server `dl.store.file.system.root.dir=${liferay.home}/data/document_library`

You can overwrite the value to some other location in your server. Liferay also supports different ways of storing the documents and media files. The following is a list of these different ways:

- Advanced file system store
- **Content Management Interoperability Services (CMIS) store**
- **Database Storage (DBStore)**
- **Amazon Simple Storage (S3Store)**
- **Java Content Repository (JCRStore)**
- Filesystem store

You can store the document in the aforementioned Amazon Simple Storage (S3 bucket) configuration:

- `dl.store.s3.access.key=`
- `dl.store.s3.secret.key=`
- `dl.store.s3.bucket.name=`

You can set the number of days that files should be left in the temporary directory before they are deleted:

- `dl.store.s3.temp.dir.clean.up.expunge=7`

Set the number of calls to S3Store and get the file before triggering the cleanup process:

- `dl.store.s3.temp.dir.clean.up.frequency=100`

By doing these settings, you can point the file repository to Amazon s3 storage.
Document types and metadata sets
As we discussed earlier, Liferay provides the document type and metadata set for Documents and Media. Using these document types or metadata sets, users can create their document, which will have extra fields for particular types of documents.

Let's take a use case for the document type. In an intranet of the Palm Tree Publications enterprise, Editorial Department needs to upload a document, which should have specific fields, such as publishing date, coauthor, document coordinator, and copyright. The metadata of the document helps the document to become searchable within the portal very easily. This helps users to search the document using the metadata value of the document.

[Note that Document types and Metadata sets are very useful to find the document easily through search.]

Let's create a new document type for our use case:

1. Select Manage | Document Type from the top menu of Documents and Media.
2. Click on the Add button from the Document Type dialog box.
3. Fill in the name and description Publisher document for the document type.
4. Now you can define Main Metadata Fields or select Additional Metadata Fields.
5. Main Metadata Fields are directly tied to their document type and are not available to other document types. Additional Metadata Fields are defined independently, and they can be used by multiple document types.
6. In **Main Metadata Fields**, we need to create fields for the document type. The following screenshot shows the fields for the publisher document:

![Document Types](image)

Figure 8.18: Document Types
In the **Main Metadata Fields** section, you can choose the fields to use from the area on the left-hand side and drag and drop them into the area on the right-hand side. The drag and drop interface allows nested fields, so you need to be careful about where you drop the fields. You can also do the settings for the default values, field labels, mouseover tips, required or not, widths, and other settings from the **Settings** tab. Configuring the fields settings, just click on the field from the area on the right-hand side, and then subsequently select the settings tab on the left-hand side for that particular field.

Note that we need to create **Additional Metadata Fields** separately and map it with Document Type. We can also create **Additional Metadata Fields** while creating document type and map it before saving the document type.

Once it is saved, you will get **Publisher document** listed under the Add button. Now you are able to create the document using the document type **Publisher document**.

This document type, that is, **Publisher document**, will only be available to the current site and not globally. If you want to have the document type throughout the site scope, you need to create the document type in the **Global** site scope.

**Metadata Set**, as discussed, is defined independently, and they can be used by multiple document types. It has the same kind of form for creating **Metadata Set**, and that metadata sets can be used to map the document type in **Additional Metadata Fields**.

### The Media Gallery portlet

In the previous chapter, we created an image carousel using Media Gallery. The Media Gallery portlet (portlet ID 31) is used to display images to the end users in an arranged manner. The Media Gallery portlet can be configured in such a way that we can select a particular folder to display images. In the *Application Display Templates* section of *Chapter 7, Understanding Sites*, we used media gallery to create the carousel. In the same way, you can use it for different purposes. In the Palm Tree intranet portal, create a page with the name "Media Gallery" and place in it the Media Gallery portlet.
Once you place the portlet on the page, it displays only the images and video files from the Documents and Media portlet. For displaying a proper image gallery, you need to configure the portlet.

Click on the Gear icon from the top-right corner of the portlet. The Media Gallery - Configuration popup will open. It has different tabs: Setup, Permissions, Communication, Sharing, and Scope.

Setup will be open by default; it has different sections, Display Settings, Folder settings, and Ratings. Refer to the following screenshot.

Display settings has different checkboxes which are Show Actions, Show Folder Menu, Show Navigation Links, and Show Search:

- **Show Action**: This will have the files action on all the image files.
- **Show Folder Menu**: This will show the folder view inside Media Gallery.
- **Show Navigation Links**: This will show the navigation menu at the top with the Home, Recent, and Mine links.
- **Show Search**: Media Gallery has the Show Search text box and Search button.
- **Folder Listing**: This allows you to select the folder from where the image files need to be display in Media Gallery.
- **Ratings**: With this, you can enable rating for the images. Also, you can enable comment ratings too.
- **Show Media Type**: This is a multiselection for the media type, which file extensions need to be displayed inside Media Gallery.
- **Display Template**: You can select the Application Display Template (ADT). Refer to the Application Display Templates section of Chapter 7, Understanding Sites.
Enabling the workflow in Documents and Media

You can enable the workflow on the files of Documents and Media too. For Documents and Media, you need to configure the folder and enable the workflow. On doing this, only that particular folder will be enabled for the workflow. That means if you want to enable the workflow for a particular department, you need to enable the workflow for the top folder and the rest of the subfolders will have the workflow enabled.
Let's configure the default workflow (Single Approver) to the Editorial Department folder. Follow these steps:

1. Locate the Editorial Department folder and click on Edit from the Action dropdown.
2. In the Document Type Restrictions and Workflow option, select Define specific document type restrictions and workflow for this folder.
3. Select the document type Basic Document. A new section will open to set the workflow.
4. Now, select the Single Approval workflow from the dropdown.
5. Finally, save it.

The following screenshot shows that the workflow is enabled for the Editorial Department folder:

![Figure 8.20: Documents and Media workflow settings](image)
Now if you create any files under any subfolder of **Editorial Department**, you will observe that the **Publish** button for file creation has changed to the **Submit for Publication** button. Once the file is created, it will be in the pending state until Approver approves it.

## Liferay Sync

Liferay Sync is an add-on application for Liferay 6.1 GA2 CE and EE and later versions. Liferay Sync allows you to synchronize files and folders from Liferay Portal, your local desktop, and even mobile environments. Users can publish, access, and share documents and files from their local environment without using the browser. Currently, most operating systems are supported by Liferay Sync for Mac and Windows (64-bit and 32-bit). Liferay Sync 1.2.3 GA3 and Liferay Sync 3.0 Beta have been released. Liferay Sync Beta for Linux is available. For mobile, Liferay Sync 3.0 Beta for Android and iOS are available. Whenever any users add, and collaborate on, files in Documents and Media, Liferay Sync synchronizes all the documents across all configured Sync clients. Liferay Sync is part of Liferay Platform. It's so well integrated that it takes care of the authentication, versioning, and social collaboration functions. Liferay Sync stores documents and files locally, while allowing you to work on the files offline. Once you are online, it reconnects automatically and synchronizes the files.

Liferay Sync makes the Liferay document management more robust and advanced, in line with today's market demand.

Note that Liferay Sync is also designed to work with Liferay Social Office. You can sync one site from the Social Office CE as well as one site from the Liferay Portal CE.

### Setting up Liferay Sync

As mentioned previously, Liferay Sync has two versions released, for Windows and Mac. Let's discuss the older and more stable version, Liferay Sync 1.2.3 GA3.
Older versions of Liferay Sync

You have to download the client application installer from https://www.liferay.com/downloads/liferay-sync. For Windows, the installer will be named liferay-sync-<version>-<date>-x<bit>.msi. For Mac, the installer will be named liferay-sync-1.2.3-<version>-<date>.dmg. For Linux, the installers will be named liferay-sync-<version>-<date>-amd<bit>.deb and liferay-sync-<version>-<date>-i<bit>.rpm.

In our case, you will install the Windows version. Once it's installed, you can see the Liferay Sync icon in your taskbar. Open the application with a double-click. To set up, you have to provide Liferay credentials. The following is the screenshot where you need to set the Sync Folder location, Server URL, and login credentials.

![Liferay Sync client interface for creating an account](image)

Now do the settings for a Liferay Sync account:

1. You can keep the default **Sync Folder** location as of now.
2. Set the **Server URL** to `http://localhost:8080`.
3. Provide the Liferay credentials and click on **OK**.
Now you need to configure the Site and the Documents and Media document folder. As you can see in the following screenshot, you can set the time interval in seconds for updating the document from Liferay Portal. Even you can change the connection settings. Finally, you need to select the sites for which you want to synchronize the Documents and Media files. After all the settings, click on OK.

![Liferay Sync Properties](image)

**Figure 8.22: Liferay properties setting**

You can set the following fields:

1. Check the checkbox for **Start Liferay Sync on Login**.
2. Check the checkbox for **Show Desktop Notifications**.
3. Select the option for **Check Server For Updates Every**. You can select the time interval in seconds.
4. Account Settings is for the local folder location, server URL, and login credentials. Here, you can change the settings by clicking on the Edit Settings button. Even you can test the connection.

5. Site Settings is for selecting the Liferay sites you want to sync.

When you are finally done with setting the fields, navigate to the folder in your local system, which is mentioned in settings. You will be able to see that the folder structure and the respective files of that particular site got synchronized from Liferay Portal.

Now, let's discuss the Liferay Sync 3.0 BETA version.

**Liferay Sync 3.0 BETA**

Liferay Sync 3.0 BETA is more advanced and robust. It is an add-on application for Liferay 6.2 CE and EE that synchronizes files between the Liferay server and the user’s desktop and mobile environments. The Liferay 6.2 Documents and Media portlet contains all the logic used by Liferay Sync. To configure Liferay 6.2 with Liferay Sync, you need to install the Sync Connector Web plugin (sync-web). You can download Sync Connector and Client from [https://www.liferay.com/downloads/liferay-sync](https://www.liferay.com/downloads/liferay-sync). Check the requirements section under Liferay Sync 3.0 BETA and download the Sync Beta connector for CE or EE. Deploy the .lpkg file in the running Liferay server in the same way we deploy other Liferay plugins. By doing this, you will install sync-web and sync-admin-portlet. The Sync Admin portlet is controlled by portal administrators in Control Panel under the Configuration section.

Note that Liferay sync-web and sync-admin are very new and don’t come with the Liferay bundle. Also, you need to keep both the client and server sides (sync-web and sync-admin) up to date. Without this sync-web and sync-admin plugin, the portal administrator will not be able to enable Sync for any site.

Once the server-side plugin is installed, you need to configure the Sync in Control Panel. Follow these steps to configure the sync:

1. Log in as the portal administrator.
2. Click on Control Panel from the Admin dropdown (dock bar).
3. Under the Configuration section, click on Sync Admin; you will be able to see a screen similar to the following screenshot.
4. In the General tab, the portal administrator can control enabling and disabling the sync. The portal administrator can allow users access to personal sites, maximum connections, and poll intervals (setting the seconds for how often clients will poll the server for updates) in seconds.
5. For now, check the **Enabled** checkbox, input the value for maximum connection as 1, and input the value for poll interval as 5.

6. Finally, save it.

The **Sync Admin** screenshot for the **General** tab allows you to enable Liferay Sync for your portal:

![Figure 8.23: Liferay Sync Admin—the General tab in Control Panel](image)

There is another tab, **Sync Site**, that has a list of all the sites in the portal, and each site has actions that are mentioned in the following screenshot:

![Figure 8.24: Liferay Sync Admin—the Sync Sites tab in Control Panel](image)
Here's a brief description of the actions mentioned in the preceding screenshot:

- **View only**: This will give only the view permission for a particular site
- **View and Add Discussion**: This will give view and add discussion permissions for a particular site
- **Full Access**: This will give full permission for a particular site
- **Disable Sync Site**: This will disable the sync for a particular site

Once you are done with the configuration for Sync Admin in Control Panel, you have to download the Liferay Sync 3.0 Beta client from the URL mentioned previously. As of now, it's available only for Windows and Mac. Once it's installed, Liferay Sync will start, and it will pop up a login form; see the following screenshot:

![Figure 8.25: Liferay Sync 3.0 Beta Sign In](image)

Provide **Server URL**. If the server is in a running state, it will put the tick and allow you to move further for login credentials. The login credentials are the same as those of the Liferay Portal server; finally, click on the **Sign In** button.

The next step is to select sites by checking the checkbox beside the sites. You can even search the sites that you want to select. Refer to the following screenshot.

Liferay Sync allows you to select multiple sites, for which you will synchronize all the documents and files in your local system.
After Sites are selected, click on the **Proceed** button for the next step. Refer to the following screenshot, which displays the site-selecting window:

![Site selecting in Liferay Sync 3.0 Beta](image)

**Figure 8.26: Site selecting in Liferay Sync 3.0 Beta**

In the next step, provide your local sync folder's name and location, and then click on the **Start Syncing** button; refer to the following screenshot:

![Liferay Sync 3.0 BETA](image)

**Figure 8.27: Liferay Sync 3.0 BETA**
Finally, on clicking on the **Start Syncing** button, you will get the **Congratulations** message. The following screenshot shows the message with the **Open Folder** button:

![Congratulations, you've successfully set up Liferay Sync](image)

Now, click on the **Open Folder** button; it will open the local folder location that you have specified. Note that the initial sync may take some time depending on the data (files) being transferred.
As we mentioned earlier, after installing Liferay Sync, an icon appears in the task bar. It allows you to reconfigure the settings (Preference), check which sites are synced, use the help button, open the Sync folder, and also stop the sync. The following screenshot illustrates Preference settings for Liferay Sync:

![Preference settings for Liferay Sync](image)

**Figure 8.29: Preference settings for Liferay Sync — Accounts tab**

In the preceding screenshot, Liferay Sync in the task bar has the following actions:

- **Open Sync Folder**: This opens the local folder location in which sync is configured
- **View Website**: This opens a specific site's Documents and Media page in the browser (login credentials are required)
- **Recent Files**: This shows the files that synced recently
- **Preference**: This opens the preference settings, where you can do the settings for Liferay Sync
- **Help**: This provides you with a step-by-step document on using Liferay Sync
- **Quit Liferay Sync**: This stops Liferay Sync in your desktop system. Sync will stop, and no data transfer will take place
Preference settings in the Accounts tab allow settings for connections, site selections, and local folder locations. You can have multiple connections for multiple Liferay Portals. Each connection will have a different set of sites and a different local folder location.

In the Accounts tab, under Accounts, you can create multiple connections using the plus (+) icon. If you want to delete the connection, you can click on the minus icon, and to edit, you can click on the pencil icon.

Note that while deleting the connection, be cautious. It will delete the local folder location too.

Before deleting the connection, change the local folder name.

All the sites for which you have the permissions will be listed on the right-hand side. Now select the required site that you want to sync by clicking on the Select Site button. A pop-up window will open. Here you can select the Sites; once you are done with selecting, click on Confirm. All the selected Sites will be listed under Selected Sites and the unselected ones will be listed under Unselected Sites.

Note that deselecting the site also deletes its folder on your local system for those particular sites.

Before deselecting the site, change the local folder location. Now if you deselect the sites, it will not find the old files in your local folder structure. So, there's no chance of losing data.

The General tab under Preferences has only three settings:

- **Launch Liferay Sync on startup**: Enabling this makes Liferay Sync on desktop start up
- **Show Desktop Notifications**: Enabling this makes Desktop Notifications when sync is completed
- **Automatically check for updates**: Enabling this checks for updates automatically
The following is a screenshot of the General tab settings of Preferences:

![Figure 8.30: Preference settings for Liferay Sync—General tab](image)

Even you can click on the **Check Now** button to sync the data from the portal instantly.

**Files in the local folder**

Now when you navigate to the local folder location, you will find a folder for each site, and each folder will have the folder structure with files in the same way as in the Documents and Media portlet. See the following screenshot; you will be able to see the Editorial project Document.pdf file:

![Figure 8.31: Local folder of Windows for Liferay Sync](image)
From here, you can edit and update the file. If you delete the file, it will also be removed from the portal. You can recover it from the Recycle Bin portal if you want to get the file back.

Make sure that the Recycle Bin portal is enabled all the time; by default, it is enabled. Otherwise, you will not be able to recover the file you have deleted.

**Liferay Sync Client for mobile devices**

Liferay Sync Client is also available for mobile (Android and iOS) devices. All the functionality of the desktop Sync is available in mobile devices too, but only one single account can be connected by a mobile device. Download the mobile version for Android and Mac from Play Store and iTunes apps store, respectively.

In Android, Liferay Sync is available through Play Store—install the app. After installing it, you will be able to see the following screen, which gives the welcome message, and what the Liferay Sync Mobile app provides you with:

![Figure 8.32: The Liferay Sync mobile welcome screen](image)

Once you have installed the app in your mobile, let's explore some interesting features. The Liferay Sync Mobile app is dynamic and robust. The user gets the features of editing, sharing, and syncing files. The user can also access the document in the offline mode. Click on the Get Started button.
Document and Media Management

You need to use **Sign In** with the same credentials as for the portal. Also input the server URL and finally click on the **Sign In** button. Refer to the following screenshot with four mobile screens; you will see the second screen with the username and **Gear** icon for settings with the **My Sites, My Documents,** and **Favorites** links:

- **My Sites**: This lists all sites for which you have access permissions
- **My Documents**: This lists all documents that you have created/uploaded from a mobile device
- **Favorites**: This lists all the files and documents that are marked as favorites

In the same screen, you will see a list of all sites. Just slide the screen to the left-hand side and you will come to the third screen, **My Sites**. Now select the **Editorial Germany Sites** folder. It will open, and if it contains any folders or files, it displays them. Click on the plus (+) sign in the top-right corner of the screen to add a new folder, upload a file, upload a photo, or upload a video. Refer to the fourth screen to add files:

![Figure 8.33: Liferay Sync mobile screens](image)

Once you upload the files, it will be listed under that particular site or folder. Refer to the following screenshot—the first mobile screen. **Editorial project document.pdf** is shown with the date and file size. You can download the file on which you want to work.

![Mobile Sync does not automatically download all the files since mobile storage is limited; with this, you save your storage memory.](icon)
File editing is also permitted. You can see the dotted icon beside the file. Once you click on that, a slider screen will appear; refer to the second screen in the following image. In the top-left corner, start marking your favorite files. It shows the file version, filename, date of last modification, and size of the file in KB. There are four icons: Share, Move, Rename, and Delete. Let's discuss these in detail:

- **Share**: This allows you to share the file with other users
- **Move**: This allows you to move the file and folder to other sites or folder structures
- **Rename**: This allows you to rename the file and folder
- **Delete**: This allows you to delete the file and folder

The following image shows the two mobile screens of the file:

![Figure 8.34: Liferay Sync mobile screens for files](image)

Finally, Liferay Sync is set for all environments: portal, desktop, and mobile.
Liferay integration with Alfresco

In certain situations, we might have to integrate third-party software into our portal to make the portal more robust and to enable it to fit into our organization infrastructure.

Alfresco is another exciting open source alternative for enterprise content management and document management. For more information, you can visit http://docs.alfresco.com/community/concepts/welcome-infocenter_community.html.

Let's discuss a case study where the Palm Tree enterprise already has Alfresco set up for the employees and contains a huge amount of document data, which needs to be accessed in Liferay Portal by the end user.

We are going to integrate Liferay 6.2 with the Alfresco 5.x repository through CMIS.

Basically, Liferay provides easy ways to integrate the Alfresco repository using Content Management Interoperability Services (CMIS). Both Liferay and Alfresco support the CMIS feature to integrate other content management repositories.

The CMIS standard defines a domain model, web services, and Restful AtomPub bindings that can be used by applications to work with one or more content management repositories/systems. For more information, visit http://docs.oasis-open.org/cmis/CMIS/v1.0/cmis-spec-v1.0.html.

Let's look into an Alfresco application that shows the User Homes folder and that displays the list of uploaded documents. The following screenshot shows the Alfresco My Files | Users Homes folder and displays the list of documents in the right-hand side panel.
Figure 8.35: Alfresco My Files user interface—the User Homes folder contains all the documents uploaded into it

Now we need to integrate the Alfresco repository into the Liferay Documents and Media portlet using the CMIS feature. Let's follow the steps mentioned here:

If you are not using any SSO for either server, make sure that you create the same user admin/admin in Liferay. Doing this, you will have a common user in both environments.

Make sure that both servers Liferay and Alfresco are running on different ports.

1. Log in with the admin portal user, click on **Content** from **Admin | Site Administration**.
2. Select **Documents and Media** from the left-hand side panel menu.
3. Select **Repository** from the **Add** dropdown.
4. The **New Repository** form will appear; fill up the form with the following data:
   - **Name**: Alfresco Repository
   - **Description**: Alfresco Repository
   - **Repository Type**: CMIS Repository (AtomPub)
   - **Repository URL**: http://localhost:8080/alfresco/api/-default-/public/cmis/versions/1.1/atom
Document and Media Management

- **Repository ID**: Keep it blank
- **Permission**: Keep the default settings

5. Finally, save the settings.

Refer to the following screenshot to create a new repository in Liferay Portal:

![Figure 8.36: Liferay CMIS settings for Document and Media file repository](image)

After saving the **New Repository** form, you will see **Alfresco Repository** inside the **Documents and Media** portlet.
Open Alfresco Repository by double-clicking on it, which will list all the folders and documents within it. The following screenshot shows a list of folders inside Alfresco Repository within the **Documents and Media** portlet:

![Figure 8.37: Synchronization of all folders from Alfresco using CMIS](image)

Select the **User Homes** folder, which has all the documents created by the user in the Alfresco application. Refer to the following screenshot, which displays the list of documents inside the **User Homes** folder:

![Figure 8.38: The User Homes folder of Alfresco with all the documents listed in the right hand-side panel](image)
Finally, we have achieved the integration of Liferay 6.2 with Alfresco 5.0. In the same way, using CMIS, you can integrate other third-party CMSes with Liferay.

Now you can set the permission on the repository for different users to access and work on the documents.

It's better to have SSO implemented so that the respective users can get proper permission entitlements.

Summary
Documents and Media Library is very robust. Liferay 6.2 has come up with more enhancements. In future versions, it will be stronger and advanced. In this chapter, you saw the different operations under documents and media: adding folders, files, and shortcuts. You learned about the edit folder and files with simple steps. The most used functions in document management are the checkout and checkin of the documents. This chapter also taught you how to set permissions to roles for documents and media. Generally, Liferay allows you to change the file repository to different storage systems. You saw how to enable the workflow for Documents and Media files. The chapter also taught you the best file syncing application for Liferay Documents and Media, Liferay Sync. The chapter helped you to get through the different environment settings for Liferay Sync. As discussed, Liferay Sync can be connected with desktop and mobile environments. You also learned how to integrate Alfresco CMS into Liferay using the CMIS feature.

In the next chapter, you are going to learn about Web Content Management System.
Web Content Management (WCM) is either bundled or a web application with administration tools designed to allow users to create, manage, and store content on web pages. The intranet portal bookpub.com of Palm Tree Publications will have a lot of web content for different departments. To manage and publish this web content, Liferay 6.2 comes with Web Content Management System. It provides nontechnical end users with the ability to add and publish content to the portal website without having programming knowledge of any sort. For complex requirements, you can write the templates. These templates will be used by nontechnical users to create web content inside the portal.

In this chapter, you will learn to create and manage web content. In bookpub.com of Palm Tree Publications, we have multiple sites. As mentioned earlier, each site will have a different scope and contain a distinct set of users, content, and data. So, in our example, each site will have its web content and it only can be accessed by appropriate sets of users. Liferay Web Content Management provides a simple interface to manage the content for your portal so that nontechnical users can create, edit, stage, approve, and publish web content easily.
Web Content Management

By the end of this chapter, you will learn how to:

- Create and publish Web Content
- Export and import Web Content
- Create and manage structures and templates
- Localize Web Content
- Schedule Web Content
- Stage page publication
- Implement workflow in Web Content

Web Content

The Liferay Web Content portlet (portlet ID 15) is available inside the site administration panel. Liferay Web Content is a very powerful and robust application, which allows users to create and manage web content very easily.

Let's explore the web content for the marketing department site. After that, we will complete a use case on web content using the workflow:

1. Now, log in as the site administrator of Palm Tree and click on Admin | Site Administration | Content from the dock bar menu. You will land on the web content portlet page inside site administration panel.
2. Once you have logged in as the site administrator, you can decide where the content needs to be created and in which site it should be displayed. You can even create the content in the global site so that the content is globally available across the portal's sites.
3. Change the Palm Tree site scope to the marketing department scope, where the content needs to be created.
4. For changing the scope, click on the down arrow button beside Palm Tree on the dock bar menu and select Marketing Department from the drop-down list. Like this, you made the portal change the scope for the content asset from the Palm Tree site to the Marketing Department site.
5. Follow this screenshot, which displays the Web Content portlet page and the change of scope of the site:

![Figure 9.1: The Web Content portlet showing the change of site content scope](image)

**Managing Web Content**

In the Web Content portlet, you will be able to see one vertical menu and one horizontal menu. Let’s discuss this menu in detail. The vertical menu has **Home**, **Recent**, and **Mine**. The horizontal menu has **Add**, **Sort By**, **Manage**, **Search**, and **Switch the view**.

Let's discuss the vertical and horizontal menus' actions in detail:

- **Home**: This is a parent folder for web content. It displays the list of all the web content created under Home. Clicking on the down arrow beside the Home button displays a few actions, such as **Add Folder**, **Subscribe**, and **Permissions**.
- **Recent**: This displays all the recent web content created.
- **Mine**: This displays all the web content created by the user.
- **Browse by Structure**: This displays all the web content according to the structure.
Let's discuss the horizontal menu's actions in detail.

- **Add**: This allows you to add a new folder and create web content based on different structures. By default, Liferay provides the Basic Web Content structure.
- **Sort By**: This allows you to sort the web content list based on Display Date and Modified Date.
- **Manage**: You can create different structures, templates, and feeds for web content. Later in the chapter, we will discuss structures, templates, and feeds in detail.
- **Search**: This allows you to search the specific web content from the list of web content. If you see a Gear icon beside the Search button, that is the advanced search feature in Liferay 6.2. Once you click on the icon, a pop-up form appears, where you can search with the web content ID, title, description, content, type, and status.
- **Switch the view**: This allows you to switch the view of the web content list, whereby you can change the views with three different types: Icon View, Descriptive View, and List View.

Now let's create basic web content for our marketing department using the default basic structure and template.

**Creating Web Content**

In Liferay, creating and managing the web content is very easy for the end user. You can create web content using the workflow, or you can simply publish the content without workflow. Now, let's create content without workflow. Later in the chapter, we will enable the workflow and create web content based on that.

In the marketing department site scope, click on web content from the left-hand side panel menu and follow these steps:

1. Click on the Add button and select Basic Web Content from the drop-down.
2. The **New Web Content** page will appear; refer to the following screenshot:

![Figure 9.2: New Web Content](image)

3. Fill in the **Title**, say **Marketing Strategy**, and **Content** (in the WYSIWYG editor), say **We are going to follow a new marketing strategy this year for sales**.

4. Finally, click on the **Publish** button.
Web Content Management

The web content is created with a unique content ID. The following screenshot shows the Marketing Strategy web content in the list:

![Marketing Strategy web content](image)

Figure 9.3: The Web Content portlet

While creating the web content, there are some actions on the right-hand side to customize web content; refer to Figure 9.2:

- **Abstract**: This allows you to describe the web content summary.
- **Categorization**: This allows you to categorize the content with the list of options provided. The list options are Announcements, Blogs, General, News, Press Release, and Test. To make your content searchable properly, you can even create tags.
- **Schedule**: This allows you to set the date and time after which your content publishes and/or expires.
- **Display Page**: This allows you to define the display page for your content. In a publication house, there will be different departments for different book types, say information technology books and literature books. The marketing department needs to manage the different categories of books on the website. They can use the display page feature. You can find the content display page template under Page Template in the Sites section of the control panel. Generally, the content display page template is configured with the Asset Publisher, Tags Navigation, and Search portlets.
- **Related Assets**: This allows you to map any number of assets with your content within a site or across the portal even if the assets are not tags and not in the same category. You can associate your content to a Blogs Entry, Message Boards Message, Web Content, Calendar Event, Bookmarks Entry, Documents and Media Document, and Wiki Page.
• **Permissions**: This allows you to set access permissions for your content. You can set limited viewable permissions for different roles by clicking on the More option.

• **Custom fields**: This allows you to set customized metadata about the web content. This custom field needs to be defined in the custom field section of the control panel.

To display the preceding content, you need to map the content with the Web Content Display portlet on the marketing department page.

**Viewing Web Content**

To view the *Marketing Strategy* web content on the marketing department site, follow these steps:

1. From the dock bar menu, select **My Sites | Marketing Department**.
2. In the **Marketing Department** site, create a new **Web Content** page and add the Web Content Display portlet. The following screenshot shows the Web Content Display portlet on the marketing department site page:

![Figure 9.4: The Web Content Display portlet](image)

3. Click on the Gear icon (**Select Web Content**) in the Web Content Display portlet, due to which a pop-up window will appear—select the Marketing Strategy content, and finally save it.
4. Refresh the page and you will see that the content is changed in the Web Content Display portlet. Change the Title of the Web Content portlet by double-clicking on the portlet title bar, and save the changes by clicking on the tick mark on the right-hand side; follow this screenshot:

![Figure 9.5: The Web Content Display portlet—change of title](image)

As mentioned earlier, Liferay provides a robust Web Content Management System. It also has the version managing feature. Whenever you edit the content, it creates a new version for the content. Let's edit the preceding content and publish it.

**Editing Web Content**

Liferay makes content editing easier for end users by providing them with two ways of editing, which are as follows:

- Users with appropriate permissions can edit the content from the site page itself within the Web Content Display portlet
- Users with appropriate permissions can edit the content from the site administration panel

Let's edit using the first approach for this example. In the Web Content Display portlet, you will find the Edit icon below the content. Refer to Figure 9.4. Click on the edit link, and the edit screen will appear; refer to the following screenshot.
In the Edit screen, you will find actions, such as **Basic Preview**, **Permissions**, and **View History**. **Basic Preview** is used to preview the web content before publishing it. **Permissions** allow you to set the access permission for the content. **View History** displays the version list of the content.

![Figure 9.6: The Web Content Display portlet edit page](image)

Now, change the title to **Marketing Strategy 2015**. Follow the preceding screenshot. Finally, click on the **Publish** button. The content title has been changed to **Marketing Strategy 2015**.
Localization
Liferay web content provides a very dynamic feature, that is, localization, so that you have the ability to choose a default language. Refer to the preceding screenshot, and you will find Default Language is English (United State). Beside that, there is the Add Translation select button.

The following screenshot shows the languages available for translation. You can add languages from the portal settings in the control panel. You can even add languages in the portal-ext.properties file using the locales.enabled key with language values, such as locales.enabled= en_US, ar_SA, hi_IN, nl_NL for English USA, Arabic (Saudi Arabia), Hindi (India), and Dutch (Netherlands).

![Marketing Strategy](image)

Figure 9.7: The Web Content edit mode — adding language translation
Let's suppose that you have selected the language German. A pop-up window will open to translate the content to the German language—fill in the title of the content and the main content in the German language and save it. Now, the web content has both English and German languages. When the portal language is changed to the German language, the Web Content Display portlet will display the German content.

If you want to remove the translation from the web content, simply open the translation and click on the **Remove Translation** button.

### Adding folders

In web content, you can also add folders to differentiate different web content in the site scope. It's very simple—the same as creating folders in documents and media. Let's add one folder in the web content with the name **IT Books**:

1. Let's assume that you are in the **Web Content** portlet inside **Site Administration Panel**.
2. Click on the **Add** button and select the **Folder** link.
3. The **New Folder** page will open—fill the folder name **IT Books** and the description **Information Technology Book**. Keep the default permission settings.
4. Finally, click on the **Save** button.

The folder with **IT Books** has been created under the **Home** parent folder.

Note that Liferay provides you with action on the folder too, such as **Edit**, **Move**, **Move to the Recycle Bin**, **Add Subfolder**, and **Permissions**.
Web Content Management

Moving Web Content

Liferay provides the feature of moving web content from the folder to another in the same site scope. Let's suppose there is a requirement to move the Computer science web content to the IT Book folder. You will then need to perform the following steps:

1. Click on the Move action from the content action list. Refer to the following screenshot:

![The Web Content list](image)

Figure 9.8: The Web Content list

2. After clicking on the Move action, the Move page will appear with Current Folder and the New Folder names.

3. You can select and browse the required folder where you want to move the Computer science web content. In our example, we need to move the content to the IT Book folder.

4. After selecting the New Folder name, click on the Move button.

Finally, the content will move to the IT Book folder.
Structures and templates

Liferay WCM comes with the unique feature of managing the content in a proper manner with the help of structures and templates. This allows the user the flexibility of handling the content more robustly and also controls the mishandling of the content. Web content is divided into two parts: the first part is structures and the second part is templates.

Structures

Structures are used to define the sets of fields in a form available to users when they create content. Each structure is mapped to templates that define the pattern of the content displayed to the end users.

The benefits of structures are as follows:

- This improves the manageability of content for the site administrator.
- This provides a format for the content to make users know what is needed to be entered to have a complete article. This makes it much easier for the end users to add content.

After getting the user input for the web content using the structure form, finally it can be formatted automatically using a mapped template.

Let’s add a structure for our use case with Title Tag line (text), Body (HTML is WYSIWYG editor), Book Sample Attachment (Document and Media), Author (text), Date Of Release (date), and Price (decimal). To create the structure, you should have sufficient permissions. Follow these steps to create the structure:

1. In the Site Administration panel, select Web Content and then click on Structures from the Manage dropdown. The Structure interface pop-up window will open.
2. Click on the Add button, and the New Structure form will appear.
3. Fill in the structure name with Book Structure and click on the Details link to expand for filling the description Structure for the book's web content. Keep the parent structure default, that is, blank.
4. In the **View** tab, create the structure, as shown in the following screenshot:

![Figure 9.9: The Web Content structure](image)

5. You can drag and drop the fields into the right-hand side box. After placing the field, you can set the field's settings to customize the field label, mark required, and so on, by clicking on the **Settings** tab.

6. In the preceding screenshot, you can see the **Source** tab, which provides the source for the structure.

7. Finally, click on the **Save** button to save the structure.

Here's a list of the fields to create the structure:

- **Boolean**: This adds a checkbox to your structure and has the value `true` for checked and `false` for unchecked.
- **Date**: This adds the date picker to your structure; the date picker helps the user with selecting the desired date in the proper format.
- **Decimal**: This adds the field that takes the number format value, including the decimal point.
- **Document and Media**: This adds a field with the browse button to select existing files from Documents and Media Library. It even allows us to upload files into the Document library.
- **HTML**: This adds the WYSIWYG editor for rich content.
- **Image**: This adds the field to browse images from Documents and Media.
- **Integer**: This adds a field that takes nonfractional number format values.
- **Link to Page**: This adds the field that allows you to link the page to the same site.
- **Number**: This adds a field that only allows number format values.
- **Radio**: This adds an option field onto your structure.
- **Select**: This adds a select drop-down box. With settings, you can make the box allow to select single and multiple values.
- **Text**: This adds a simple textbox for the title and the author name.
- **TextBox**: This adds the text area onto your structure to store long descriptions.

Structures provide a huge range of fields, which help you to gather the information from the users for web content.

After you click on the **Save** button, it will create a structure with the name **Book structure**. Once you visit the **Structure** pop-up window, you will find that **Book Structure** is listed with the following heading **ID**, **Name**, **Description**, **Modified Date**, and **Actions**. Each structure will have a few actions, which need to be managed. Refer to the following screenshot:

![Figure 9.10: Web Content structure actions](image-url)
The actions are as follows:

- **Edit**: This allows the user to edit the structure whenever needed.
- **Edit Default Values**: This allows the user to set the default values for the structure. These default values help the users with predefined values while creating the web content.
- **Manage Templates**: This allows you to create templates for the specific structure. Even you can create the template from the template pop-up window separately and only need to select the structure for mapping with the template. With **Manage Templates**, it automatically selects the respective structure.
- **Permissions**: With this, you can set the access permissions for the structure.
- **Copy**: With this, you can copy the structure to another by specifying the new structure name.
- **Delete**: With this, you can delete the structure forever.

As mentioned previously, default values for particular structures can be set. You can set most values, such as **Content**, **Abstract**, **Categorization**, **Display Page**, **Related Assets**, **Permissions**, and **Custom Fields**. When you create new web content, the default values will be right there. For example, you want to make sure that whenever the content is created using this structure, it should have **Information Technology** tags. You can set the **Tags** with **Information Technology** in **Categorization**. Now all the web content created based on this structure will always have **Information Technology** tags.
Templates

Templates are the wrapper of look and feel over the content. All the input from the web content author will be used by a template and put all together with a nice design for the end user to view. Whenever developers make changes to the structure, they should also update the changes in the respective templates. In some scenarios, you can use generic templates that are not associated with any structure. Generic templates are free templates that can be reusable code importable into another template. Templates can be created in three languages: FreeMarker (.ftl), Extensible Stylesheet Language (.xsl), and Velocity (.vm).

- **FreeMarker template language**: This is one of the most popular languages to write templates. It is a *template engine*—a generic tool to generate text output (anything from HTML to autogenerated source code) based on templates. For more detail information, visit http://freemarker.org/.
- **Extensible Stylesheet language**: This is also used for templates to transform the underlying XML of a structure into HTML form for the browser.
- **Velocity macro**: It is a scripting language, which allows the developer to write logic within HTML. For more information visit https://velocity.apache.org/engine/releases/velocity-1.5/.

Now, let's create the template for the preceding structure. The template can be created in two ways, which are as follows:

- Firstly, you can directly create the template from the structure list action by using Manage Templates. This action will automatically associate the structure with the template.
- Secondly, you can go to the Manage button just as with structures and select the template from the dropdown.

In this example, we will go with the second approach; follow these steps to create templates:

1. Select Template from the Manage button dropdown of the web content section in Site Administration Panel.
2. The template pop-up window will appear; click on the Add button.
3. Fill in the template name Book Template, and click on the Detail link to expand a few fields. Select the structure for which the template is going to be created. Select the language in which you are going to create the template. We selected FreeMarker for our example. Also, fill in the description Template for book content. You can even select the small image for the template.
4. In the following screen, you can find the right-hand side script section, where you have to write the FreeMarker script. You can use the left-hand side panel to quickly add commonly used variables.

5. After completing the template code, you can save the template.

6. The following screenshot shows the script box with the left-hand side panel and the right-hand side panel. The left-hand side panel is to assist you while coding. And you have to write the script in the right-hand side panel.

![Figure 9.12: Template scripting with the FreeMarker language](image)

In the preceding screenshot, you can see the choose file button; you can upload any script file in any format. The script code will be displayed in the right-hand side box.
After saving the template, it will be listed in the templates pop-up window with actions. The following screenshot shows the action associated with it.

![Figure 9.13: Structure and template Web Content](image)

The actions on the template are as follows:

- **Edit**: This allows you to edit the template
- **Permissions**: This allows you to set the access permission for the template
- **Copy**: This makes a duplicate copy of the template
- **Delete**: This deletes the template forever

Finally, the structure and template are ready for the content. Now, you can create content using the book structure by following the steps:

1. Go to **Site Administration Panel** and select **Book Structure** from the **Add** button of the web content section.
2. A new web content page will appear; fill in the required data and publish it.
3. Go to the site page and in the Web Content Display portlet, select the web content.
The web content will be published as per the template design. The view of the web content is different than the previous one:

![Book Content](image)

Figure 9.14: Change effected in the web content look and feel after implementing the template

We have used a sample template without any CSS; you can use CSS and make the look and feel more attractive.

**Assigning permissions**

The Web Content portlet can be accessed inside Site Administration Panel too. A Site member won't have the permissions to add and edit web content on the Web Content portlet, but they might have access to view the content.

Let's provide the role entitlements for the MB Topic Admin role and allow the user to edit content, where Lotti is associated as a member.

To set the permission entitlements for the web content, the portal administrator needs to define permissions in roles. Under the User section, click on Roles in Control Panel and locate MB Topic Admin. Select Define Permissions from the Action button beside Mb Topic Admin and search for the web content. You will get the entitlements settings for the web content.

Permissions for **Web Content** can be assigned under Site Administration | Content:

- **Site Administration | Content**: General Permissions, Resource Permissions (Web Content), Web Content Folder, Web Content Article, Web Content Feed, Web Content Structure, and Web Content Template.

Let discuss each of them in detail.
General Permissions

General Permissions is defined as the permissions with which the users can enjoy most administrator rights for a particular application in the portal. Access to Site Administration entitlements are given to the users who have the access to create and edit the content:

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to Site Administration</td>
<td>This provides the ability to access the portlet in the site administration panel</td>
</tr>
<tr>
<td>Configuration</td>
<td>This provides the ability to configure the portlets</td>
</tr>
<tr>
<td>Permission</td>
<td>This provides the ability to assign permissions</td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view</td>
</tr>
</tbody>
</table>

Whenever you give entitlements for specific portlets, you have to be clear about the user roles.

Resource Permissions – Web Content

Resource Permissions defines what actions can be performed on resources displayed or managed from the application. Basically, resources are any user-facing application in the portal, such as uses, organization, sites, blogs, wikis, and so on:

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Feed</td>
<td>This provides the ability to add feeds</td>
</tr>
<tr>
<td>Add Folder</td>
<td>This provides the ability to add folders</td>
</tr>
<tr>
<td>Add Structure</td>
<td>This provides the ability to add structures</td>
</tr>
<tr>
<td>Add Template</td>
<td>This provides the ability to add templates</td>
</tr>
<tr>
<td>Add Web Content</td>
<td>This provides the ability to add web content</td>
</tr>
<tr>
<td>Permissions</td>
<td>This provides the ability to assign permissions</td>
</tr>
<tr>
<td>Subscribe</td>
<td>This provides the ability to subscribe</td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view</td>
</tr>
</tbody>
</table>
Let's say the user "Lotti Stein" is a member of the role "MB Topic Admin". As a portal administrator, you are required to provide the entitlement to add the web content and view for the user "Lotti Stein" and also provide the entitlements to access the Web Content portlet in the site administration panel. How do we accomplish this? We do it by following these steps:

1. Log in as a portal administrator since Roles is only accessible by the Portal admin.
2. Click on Roles under the category Users of Control Panel.
3. Then, locate a role, say MB Topic Admin.
4. Then, click on the Define Permissions icon from the Actions menu on the right-hand side of the role. Now, search for Web Content.
5. Click Web Content from Site Administration | content, enable the Access in Site Administration checkbox from General permissions, and use Add Web Content from Web Content.
6. Finally, save the changes.

From now on, users and members of the role "MB Topic Admin" will have the Add Web Content button to add the content.

**Web Content folder**

Permissions entitlements for web content folders are to access the folder and add the file to that folder:

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access</td>
<td>This provides the ability to access the web content folder</td>
</tr>
<tr>
<td>Add Subfolder</td>
<td>This provides the ability to add subfolders</td>
</tr>
<tr>
<td>Add Web Content</td>
<td>This provides the ability to add the web content</td>
</tr>
<tr>
<td>Delete</td>
<td>This provides the ability to delete</td>
</tr>
<tr>
<td>Permissions</td>
<td>This provides the ability to assign permissions</td>
</tr>
<tr>
<td>Update</td>
<td>This provides the ability to update</td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view</td>
</tr>
</tbody>
</table>

Access entitlements can be assigned to the role that needs to access the folder and needs the ability to add the web content and subfolders.
Web Content articles
Permissions entitlements on web content articles are assigned for the user who has access to the web content related to discussions. The following are the entitlements listed for the discussions on the web content:

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Discussion</td>
<td>This provides the ability to add discussions on the web content</td>
</tr>
<tr>
<td>Delete</td>
<td>This provides the ability to delete</td>
</tr>
<tr>
<td>Delete Discussion</td>
<td>This provides the ability to delete discussions on the web content</td>
</tr>
<tr>
<td>Expire</td>
<td>This provides the ability to expire the web content</td>
</tr>
<tr>
<td>Permissions</td>
<td>This provides the ability to assign permissions</td>
</tr>
<tr>
<td>Update</td>
<td>This provides the ability to update the web content</td>
</tr>
<tr>
<td>Update Discussion</td>
<td>This provides the ability to update discussions on the web content</td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view</td>
</tr>
</tbody>
</table>

Web Content feeds
Permission entitlements for web content feeds can be assigned to the users to delete, update, view, and set the permission on the feed:

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delete</td>
<td>This provides the ability to delete feeds</td>
</tr>
<tr>
<td>Permissions</td>
<td>This provides the ability to assign permissions</td>
</tr>
<tr>
<td>Update</td>
<td>This provides the ability to update the feed</td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view</td>
</tr>
</tbody>
</table>

Web Content structures
Permission entitlements for web content structures can be assigned to the users to delete, update, and configure the permission on the structure:

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delete</td>
<td>This provides the ability to delete</td>
</tr>
<tr>
<td>Permissions</td>
<td>This provides the ability to assign permissions</td>
</tr>
<tr>
<td>Update</td>
<td>This provides the ability to update the structure</td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view</td>
</tr>
</tbody>
</table>
Web Content templates

Permission entitlements for web content templates can be assigned to the users to delete, update, and configure the permission on the template:

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delete</td>
<td>This provides the ability to delete templates</td>
</tr>
<tr>
<td>Permissions</td>
<td>This provides the ability to assign permissions</td>
</tr>
<tr>
<td>Update</td>
<td>This provides the ability to update the template</td>
</tr>
<tr>
<td>View</td>
<td>This provides the ability to view</td>
</tr>
</tbody>
</table>

Web Content configurations

As mentioned previously, the Web Content portlet is only available in Site Administration Panel. You can do the configuration for the Web Content portlet in Site Administration Panel by selecting web content from the left-hand side panel content scope. Select the Gear icon from the top-right corner and click on configuration.

Configuration has four tabs, which are Email From, Web Content Added Email, Web Content review Email, and Web Content Updated Email. Also, you will see the Archive/Restore Setup link, which allows you to archive the content and restore it again when required. Let's discuss each tab in detail.

The Email From tab is for setting the e-mail sender's name and the sender's e-mail address. The following screenshot displays the Email From tab:

![Figure 9.15: Web Content - Configuration | Email From](image)
The email tab to which the web content is added allows you to enable the mail feature to send mail when the new web content is added. The following screenshot displays the e-mail format for sending mail when new content is created:

You can enable or disable the mail and even change the mail subject and body. You can use the definition of team for the e-mail subject and body.

In the same way, in the other two tabs, Web Content Review Email and Web Content Update Email, you can enable or disable the mail and even change the mail subject and body.

Web Content Review Email is used for e-mail notifications to content reviewers when content is created. Web Content Update Email is used for the e-mail notification when content is updated.
Extra settings for Web Content

The Web Content portlet is so flexible that many settings are defined in portal.properties. As you saw earlier, the localization setting can also be set through portal-ext.properties.

Liferay has excellent portal configuration features, which allow you to do extensive customization for different applications/portlets. Let’s have a look at the configurable items in the properties file:

```
journal.display.views=icon,descriptive,list
journal.default.display.view=icon
```

The preceding property, journal.display.views, allows you to set the display views. As we mentioned under switch the view in the Managing Web Content section, there are three different views: icon, descriptive, and list. The property journal.default.display.view=icon sets the default display as the icon. You can override this property in portal-ext.properties, for example, if you want to have list as the default view, just set the journal.default.display.view=list value:

```
journal.display.views=icon,descriptive,list
journal.default.display.view=list
```

The preceding properties are for the right-hand side panel menu of the new web content page. The first one appears when we add new web content. And the second one appears when we update the existing web content:

```
journal.article.form.add=content,abstract,categorization,schedule,
display-page,related-assets,permissions,custom-fields
journal.article.form.update=content,abstract,categorization,schedule,
display-page,related-assets,permissions,custom-fields
```

The property journal.article.force.autogenerate.id=true is set to true to generate the content IDs automatically. In Categorization, you find the type drop-down list; it is mapped by journal.article.types, which has the announcements, blogs, general, news, press-release, and test values. If you want to remove the test, simply override this property in portal-ext.properties:

```
journal.article.force.autogenerate.id=true
journal.article.types=announcements,blogs,general,news,press-release
```

The preceding property is set to true to check whether a user has the view permission on the content. The default value is false so that the content is not checked for the user view permission:

```
journal.article.view.permission.check.enabled=false
```

The preceding property is set to true to check whether a user has the view permission on the content. The default value is false so that the content is not checked for the user view permission:

```
journal.article.comments.enabled=true
```
Every bit of web content has the comments area for users; to remove the comments for web content, you just need to update the preceding property in `portal-ext.properties` with `false`.

```properties
journal.template.freemarker.restricted.variables=serviceLocator
journal.template.velocity.restricted.variables=serviceLocator
```

The preceding properties are set for the input of a comma-delimited list of variables, which are restricted from the context in FreeMarker- and Velocity-based content:

```properties
journal.image.extensions=.gif,.jpeg,.jpg,.png
```

The property is defined for image extension in the web content; you can add a few more extensions, or you can make an asterisk mark to permit all file extensions:

```properties
journal.publish.version.history.by.default=true
```

Set the preceding property to `false` when only the latest approved version of the web content should be published by default:

```properties
journal.email.from.name=
journal.email.from.address=
journal.email.article.added.enabled=true
journal.email.article.added.subject=com/liferay/portlet/journal/dependencies/email_article_added_subject.tmpl
journal.email.article.added.body=com/liferay/portlet/journal/dependencies/email_article_added_body.tmpl
```

The properties are for e-mail notification settings for the workflow. They map the workflow with e-mail templates for the web content. For each workflow action, notification templates are defined.

**The export and import of Web Content**

The export/import feature allows you to export the LAR file, which includes content, configuration, and permission settings of the Web Content portlet. The same LAR file can be imported in other Liferay instances, which have the same version of the Liferay server.

You can export the web content by following these steps:

1. In the Site Administration panel, click on the Gear icon and select the Export/Import link of the Web Content portlet.
2. You will get the Export form, which allows you to select the content by the date range or simply checking the Content checkbox. This also allows you to select the configuration and permissions of the web content. Refer to the following screenshot for the export form.
3. Finally, click on the **Export** button.

![Web Content - Export / Import](image)

Figure 9.17: Web Content export

4. After you click on the **Export** button, it will start the export process and list it in the **Current and Previous** tab. The following screenshot shows the successful export of the LAR file. You can download the .lar file and import the LAR file to other Liferay instances.

Note that a LAR file can only be imported in the same version of the Liferay server. For example, you can't import the LAR file of Liferay 6.2 CE to Liferay 6.2 EE.
Importing the LAR file to the Web Content portlet is very easy. You just need to browse or drag and drop the .lar file within the dotted boundary inside the **New Import Process** tab; refer to the following screenshot:

5. After you select the file, it will start the import process and list it in the **Current and Previous** tab.
The Web Content Display portlet

The Web Content Display portlet basically displays the web content on the site page, which we have already seen in the preceding sections. Here, we will explore it more in detail. If you refer to Figure 9.14, you will notice that it provides four actions: Edit, Edit Template, Select Web Content, and Add:

- **Edit**: This allows the user to edit the web content on the page itself. When Edit is clicked on, it opens the web content edit page and the user can directly edit the content.

- **Edit Template**: This allows users to edit templates. Once they click on the Edit Template link, it opens the template edit page and they can make changes in the template directly.

- **Select Web Content**: This allows the user to select the web content and do the required configuration settings, such as enable print, enable ratings, enable comments, and so on.

- **Add**: It allows the creation of new web content on the fly. Users need not visit the Site Administrator Panel to create the content. Once a user clicks on the Add link, a new web content page opens for the user.

The Web Content Display portlet also has configuration settings. Users can click on the Gear icon and select the Configuration link. Its opens the configuration pop-up window, with five tabs, which are Setup, Supported Clients, Permissions, Sharing, and Scope:

- **Setup**: It's similar to the Select Web Content link, which allows the user to configure Web Content, Enable Print, Enable Related Assets, Enable Ratings, and so on. Refer to the Asset Publisher section of Chapter 4, Forums, Categorization, and Asset Publishing, to know about the key words. Refer to the next screenshot for more details. Once you select the content, Displaying Content will display the selected content and then finally save the content.

- **Supported Clients**: This shows the portlet mode views Regular Browser and Mobile Device. You can enable and disable this as and when required.

- **Permissions**: This allows access permissions to be set for the Web Content portlet for different roles.

- **Sharing**: You can share the portlet with other social media and other websites. It provides tabs such as My Website, Facebook, OpenSocial Gadget, Netvibes, and Friends.

---

[ 478 ]
**Scope:** Users can define the scope of the Web Content portlet globally.

![Book Content - Configuration](image)

Figure 9.20: Book Content - Configuration | Setup

The Web Content Display configuration helps users to configure the portlet and view the content with extra enabled features.

**The Web Content Search portlet**

In an intranet portal, sometimes you might have to search the content all over the site. To search, you need to have a search engine that will find the content all over the site. Liferay provides you with the Web Content Search portlet, which allows you to do faceted searches. The Portal admin can place the Web Content Search portlet on the page. Now, the end user can search for the content over the site and get the required list of the search items.
The faceted search allows the search results to be narrowed down by applying a set of filters to the result of a search query. The Liferay Search portlet supports faceted searches.

![Web Content Search portlet](image)

Figure 9.21: The Web Content Search portlet

If you do the search for a keyword, say portal, it finds the content over the site and provides the list of contents. The following screenshot shows the search result for content over the site:

![Web Content Search portlet – Result](image)

Fig 9.22: The Web Content Search portlet – Result

In the configuration, you can set the web content type. With this, you define the search behavior. For example, if you define the content type as Blog, the search will only be performed on blog type content. That means you are restricting the search on different content types. The options provided for different content types are Announcements, Blogs, General, News, Press Release, and Test. You can add new content types as per your requirement through `portal-ext.properties`:

```
journal.article.types=announcements,blogs,general,news,press-release,test
```
Scheduling Web Content

Liferay 6.2 has the unique feature of scheduling web content, whereby it allows users the flexibility of determining content displayed, expired and/or reviewed. This allows the author to make their content schedule while creating; it's a nice feature to keep the portal free from outdated content. The following screenshot displays the schedule for the content, with settings for display date, never expire, and never review.

![Figure 9.23: The Web Content schedule](image)

The settings in the schedule are explained here:

- **Display Date**: This is set when the web content is displayed
- **Expiration Date**: This is set when the web content expires; the default date is 1 year
- **Never Expire**: This allows you to make the web content never expire
- **Review Date**: This sets the web content review date
- **Never Review**: This allows you to make the web content never be reviewed

Scheduling allows you control in managing when, and for how long, your web content is displayed on your website. You even have an ability to determine when your content should be reviewed for accuracy and/or relevance.
Staging page publication

Liferay have a very unique feature of staging page publication, which helps you to make the change on the pages behind the scenes and publish every change in one shot. Basically, it is a specialized staging area where you do the current changes to your site, without letting users know the changes are happening in backend. Once your update is finished, you can publish all the changes at once.

The site administrator can configure the staging in two ways:

- **Local Live**: In this, both the staging and local environments are hosted on the same server. Whenever Local Live staging is enabled for a site, a clone of the site is created containing copies of the entire site's existing pages. The portal data is also copied, depending on which portlets are selected when staging is enabled. The cloned site becomes the staging environment, and the original site becomes the live environment.

- **Remote Live**: When Remote Live staging is enabled for a site, a connection is established between the current site and another site on a remote Liferay server. The remote site becomes the live environment and the current site becomes the staging environment—an instance of Liferay Portal used solely for staging. Content creators can use the staging server to make their changes, while the live server handles the incoming user traffic. When changes to the site are ready to be published, they are pushed over the network to the Remote Live server.

Whether you enable Local Live staging or Remote Live staging, the interface for managing and publishing staged pages is the same.

Question come up, "when should Local Live staging be used and when should Remote Live staging be used?" The pros and cons of Local Live staging are as follows.

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>It allows you to publish site changes very quickly since the staged and live environments are on the same server</td>
<td>Since the staged content and the production content are stored in the same database, the content isn't well protected or backed up unlike Remote Live staging</td>
</tr>
<tr>
<td>It is easier and faster to switch between the staged and live environments</td>
<td>You can't install a new version of the portlet in a Local Live staging environment since only one version of a portlet can be installed at any given time on a single Liferay server</td>
</tr>
</tbody>
</table>
The pros and cons of Remote Live staging are as follows:

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>It can install two version of the portlet since there are two separate servers for the live and staging environments</td>
<td>Publishing is slower than in Local Live staging since data needs to be transferred over a network</td>
</tr>
<tr>
<td>Additionally, you can also use one Liferay instance as the staging server for multiple production servers</td>
<td>You need more hardware to run a separate staging server</td>
</tr>
</tbody>
</table>

Liferay 6.2 also offers the Page Versioning feature. This feature works with both Local Live staging and Remote Live staging and allows site administrators to create multiple variations of staged pages.

**Local Live staging**

Local Live Staging can be enabled from the site settings. As a site administrator, you can go to the site administration panel, select the **Configuration** page, select **Site Settings** from the left-hand side menu, and click on **Staging** listed under Advanced on the right-hand side menu. The **Staging** settings page will appear, where you can select either **None**, **Local Live** or **Remote Live** from the options. After selecting any one option, it will display additional settings. Say you have selected **Local Live**, for which additional settings appear; refer to the next screenshot. Staging allows changes to be made in a staging environment so that work can be reviewed, possibly using a workflow, before it's published to a live site. Let's enable **Local Live** staging; select the Local Live staging option—additional options appear below, such as **Page Versioning** and **Staging Content**. Page versioning can be enabled on the site's public pages, private pages, both, or neither. It allows you to work in parallel on different versions of pages and maintains a history of all page modifications. The following screenshot shows the Local Live staging settings page:

1. Let's check the **Enable On Public Page** checkbox, select **Documents and Media** and **Web Content** from **Staged Content**, and **Save** it.
2. You will get a popup for confirmation, asking **Are you sure you want to activate local staging for Palm Tree?**. Click on **OK** to confirm or **Cancel** to cancel the settings.

![Site Settings](image)

Figure 9.24: Staging—Local Live

3. After you enable **Local Live** staging and save the setting, you will find the **Staging** and **Live** buttons on the dock bar menu.

4. Click on the **Staging** button, which will open the staging public page for you, where you can make changes by placing the portlet and configuring it.

5. Clicking on the **Live** button will display the actual public page (production) without your changes made in the staging page.
6. Now, after you have made final changes to the **Staging** page, you can publish it to the **Live** site by simple clicking on the **Publish to Live** button, which appears after clicking on the arrow link beside the **Staging** button on the dock bar menu.

Refer to the next screenshot for the **Staging** and **Live** buttons on the dock bar menu.

There are a few settings (Gear icon) available on the staging bar, namely **Manage Site Pages Variations** and **Manage Page Variations**. Also, you will find the **History** icon and the **Undo** and **Redo** icon. Let's discuss each in brief:

- **Manage Site Pages Variations**: This allows the site administrator to work in parallel on multiple versions of a staged site page.

- **Manage Page Variations**: This allows the site administrator to work in parallel on multiple versions of a staged page.

- **History**: This lists all the revisions of the page based on the publication dates. The site administrator will be able to review history and see how the pages looked at that point.

- **Undo/Redo**: This allows us to undo and redo the changes on the page, which will save you the time required to manually add and remove the portlet on the page.

- **Mark as Ready for Publication**: When you are done with making changes in the staged page, you can click on the **Mark as Ready for Publication** button, which will change the status from **Draft** to **Ready for Publication**. Now, you can click on the **Publish to Live** button.

Note that the changes you have made before clicking on **Marked as Ready for Publication** will be published to the live site. The changes you made after clicking on **Marked as Ready for Publication** will not get effected.

---

Figure 9.25: Staging in the dock bar menu—the Publish to Live button
7. After clicking on the **Publish to Live** button, a **Publish to Live** configuration pop-up window appears, which allows you to configure the staging content to move to the **Live** site page.

8. The following screenshot has different tabs: **New Publication Process**, **Current and Previous**, and **Scheduled**:
   - **New Publication Process**: This allows you to configure the staging content to move to the live site.
   - **Current and Previous**: This lists all the old and current published content through staging.
   - **Scheduled**: This lists the scheduled event for moving content from Staging to Live. This scheduled event can be created in **New Publication Process**.

![Publish to Live pop-up window](image)

Figure 9.26: The Publish to Live pop-up window

It’s one of the best features of Liferay that makes possible the publishing of content without disturbing the **Live** site, which maintains the history of content moved from staging to the **Live** site.

Let’s see the **Remote Live** staging configuration.
Remote Live staging

Once you enable Remote Live staging, you get the additional settings for the remote host servers. The remote site becomes the live environment and the current site becomes the staging environment. Both remote and live Liferay servers should be separate systems, and even the databases should be separate. So, both servers will share the necessary information transferred over the network connection.

Before enabling Remote Live staging for the site, you need to add the remote Liferay server to the current Liferay server. Also, the current Liferay server needs to be added in the remote Liferay server. It makes a bridge between the two servers. The Liferay server's tunneling servlet authentication verifier checks both the servers. In portal-ext.properties, you have to set the following properties for the current server:

```
tunnel.servlet.hosts.allowed=127.0.0.1,SERVER_IP,[Remote server IP address]
axis.servlet.hosts.allowed=127.0.0.1,SERVER_IP,192.168.0.16,[Remote server IP address]
tunneling.servlet.shared.secret=[secret]
auth.verifier.TunnelingServletAuthVerifier.hosts.allowed=
```

Add the property in the remote Liferay server portal-ext.properties file:

```
tunnel.servlet.hosts.allowed=127.0.0.1,SERVER_IP,[Local server IP address]
axis.servlet.hosts.allowed=127.0.0.1,SERVER_IP,192.168.0.16,[Local server IP address]
tunneling.servlet.shared.secret=[secret]
auth.verifier.TunnelingServletAuthVerifier.hosts.allowed=
```

Liferay's use of a preshared key between your staging and production environments helps secure the remote publication process by removing the need to send the publishing user's password to the remote server for web service authentication. Using a preshared key allows the Liferay server to create an authorization context (permission checker) from the provided e-mail address, screen name, or user ID without the user's password. You can specify any value for the tunneling.servlet.shared.secret property, which should be matched with the remote server value. Finally, you need to restart both Liferay servers after making these portal properties update changes.
After restarting both servers, you can enable **Remote Live** staging. You also need to set your remote Liferay server IP address into the **Remote Host/IP** field. If in your case, the remote Liferay server is a cluster, then you need to set **Remote Host/IP** to the load-balanced IP address of the cluster in order to increase the availability of the publishing process. Next, input the port on which the remote Liferay instance is running into the **Remote Port** field. Now you only need to input Remote Path Context if a nonroot portal servlet context is being used on the remote Liferay server, and finally, input the site ID of the site on the remote Liferay server, which will be used for the Live environment. Check the remote Liferay server for the site ID. If a site hasn't already been created, then you need to log in to the remote Liferay server and create a new blank site. Note the Site ID after the site is created. Then, you can input it into the **Remote Site ID** field on your local Liferay server. Finally, it's best to check the **Use a Secure Network Connection** field to use HTTPS for the publication of pages from your local (staging) Liferay server to your remote (live) Liferay server.

The following screenshot shows the settings for Remote Live staging:

![Figure 9.27: Staging—Remote Live](image-url)
Note that if you are unable to set the tunneling servlet shared secret or the values of these properties on your current and remote servers properly or the values don't match, then you won't be able to enable staging and an error message appears when you try to publish changes from the local (staging) server to the Remote (Live) server. Liferay passes the user's e-mail address, screen name, or user ID to the remote server to perform a permission check.

In order for a publishing operation to succeed, the operation must be performed by a user who has identical credentials and permissions on both the local (staging) and the remote (live) server. This is true regardless of whether the user attempts to publish the changes immediately or attempts to schedule the publication for later.

**A workflow for Web Content**

The Liferay Web Content portlet supports a workflow, which makes it more efficient and robust. In the web content, the workflow is used to make the web content pass through the review and approval process to achieve the content standard before publishing it on the site.

Liferay 6.2 CE is bundled with the Kaleo workflow beforehand, and for Liferay 6.2 EE, the Kaleo workflow can be installed too.

Making your content error-free and standard, you need to enable the workflow for Web Content Management System; it's very simple and straightforward. You need to design the workflow definition as per your requirement.

Let's take a case study for workflow definition in Palm Tree Organization, which has a simple workflow. The web content, when created, is passed through the workflow, where the reviewer (Editor) reviews the content and approves it. It again goes to the approver (Publisher), who reviews the content and approves it. If the reviewer or approver rejects the content, then the content goes back to the author and asks for a resubmit.

For this requirement, you need to create a workflow definition, which needs to be uploaded in **Control Panel | Configuration | Workflow**. In Chapter 10, *Marketplace, Social Office, and Audience Targeting*, you will learn how to upload the workflow definition in the control panel.
For now, let’s imagine you have uploaded the workflow definition in the control panel. Now, you need to enable the workflow for the Palm Tree site, which you can achieve in a very simple way. We have already discussed this in the Advance site settings section of Chapter 7, Understanding Sites. Let’s explore this again in detail.

The Site Administrator has the access permission to configure the workflow from the Site Administrator panel by clicking on Workflow Configuration under the Configuration section in the left-hand side panel. The workflow configuration will open, which allows the configuration of different resources, such as Page Revision, Blogs Entry, Web content Article, Comments, Message Boards Message, and Wiki Page. Select the workflow for Web Content Article from the selection box provided with the same name and version that you uploaded in the control panel. Refer to the following screenshot for the workflow configuration for the Palm Tree site:

![Workflow Configuration](image)

Once the workflow configuration is complete, you will able to see the Submit for Publication button instead of the Publish button while creating the web content:

Note that different sites can be configured with different workflows as per their requirement.
Let's create basic web content inside the Palm Tree organization using the workflow. Refer to the following screenshot, which displays new web content creation with the **Submit for Publication** button:

![Figure 9.29: Creating Web Content using workflow](image)

1. Once you click on the **Submit for Publication** button, it will send the e-mail notification to the reviewer, who also receives a notification in the dock bar menu displayed in the following screenshot:

![Figure 9.30: Reviewer notification in the dock bar menu](image)

The reviewer can directly click on the notification, which will open a pop-up window for **My Workflow Task**. It will have details of the document and to whom the workflow is assigned. Also, it shows a preview of the content with the view link to make it easy for the reviewer to review the content directly by clicking on the view link; refer to the next screenshot.
2. On the right-hand side, you have three links, which are described as follows:
   - **Assign to Me**: This allows you to assign the workflow task in your name
   - **Assign to...**: This allows you to assign the workflow task to another reviewer
   - **Update Due Date**: This allows you to update the due date for the workflow task

   ![My Workflow Tasks — Assign to Me](image)

   Figure 9.31: My Workflow Tasks — Assign to Me

3. Click on the **Assign to Me** link, which pops up a screen for comment input with the OK and Cancel buttons.

4. Input the comments, say **Assigned to me for Review** and click on the OK button.
5. After clicking on the OK button, the workflow task is assigned to you. The following screenshot displays the workflow task assigned to you, and by clicking on the approve link on the right-hand side, you can move the workflow to the second level:

![Image of workflow task](image)

Figure 9.32: My Workflow Tasks—Review

In the preceding screenshot, you can see the workflow task is assigned to you and state of the workflow is the **review** mode.

6. In the **Preview of the web content Article** section, you will find the **view** and **Edit** links; by clicking on the **Edit** link, you can edit the content.

7. In the **Activities** section, you can see all the activities done in the particular workflow task. You can also give comments for the web content by clicking on the **Be the first** link in the **Comment** section.
8. On the right-hand side, you will find the following links:

- **Approve**: This allows you to approve the content for other levels
- **Reject**: This allows you to reject the content and send it back to the author for resubmitting it
- **Assign to...**: This allows you to assign the review step to other reviewers
- **Update Due Date**: This allows you to update the due date for the workflow task

Note that the preceding links are part of your workflow definition. You can have different labels according to your workflow definition.

Once the Reviewer has approved the content after review, in the next step, it will be moved to the Approver (Publisher) status to review the content. The Approver (Publisher) will have the same screen as the preceding one to approve or reject the content.

Once the approver approves the content, it will be published to the site. The status of the content will be approved.

The content is in the pending status until it is in the workflow engine. Once the approver approves the content, the status changes to **Approve**. If the approver rejects the content, the status of the content changes to **Reject**. If the author withdraws the submission, the status of the content changes to **Draft**.

The reviewer or approver can go to the **My Account** page from the **Users** dropdown in the dock bar menu. In the **My Account** pop-up window, you will find different links; select the **My Workflow Tasks** link, where you get the two tabs, **Pending** and **Completed**:

- **Pending**: Here, you will find two accordions with the names **Assigned to My Roles** and **Assign to Me**:
  - **Assign to Me**: This lists all the workflow tasks assigned to you.
  - **Assigned to My Roles**: This lists all the unassigned workflow tasks. From here, you can assign the workflow task to yourself or to other reviewers.

- **Completed**: This will list all the completed workflow jobs.
Refer to the next screenshot for the **My Workflow Tasks** pop-up window.

The entry of the workflow task in **Assign to Me** has some actions links: **Approve**, **Reject**, **Assign to...**, and **Update Due Date**. If you click on the workflow task entry link on **Task** and **Title**, a detail of the workflow task will open; refer to Figure 9.32. In the same way, when you click on the workflow task link from **Assigned to My Roles** accordion, it will open a detail of the workflow task for assigning; refer to Figure 9.31.

You can do all the operations on the workflow task, such as **Approve**, **Reject**, **Assign to...**, and **Update Due Date** from **My Workflow Tasks** without going to the detail page of the workflow task.

![My Workflow Tasks](image)

**Figure 9.33: My Workflow Tasks inside My Account**

Liferay also provides a feature from where you can withdraw your workflow submission. In the **My Account** pop-up window, you will find the **My Submissions** link beside **My Workflow Tasks**. Click on the **My Submissions** link to list all the workflow tasks submitted by logged-in users under the **Pending** tab. The following screenshot displays the list of workflow tasks submitted by the Palm Tree administrator.

![My Submissions](image)

**Figure 9.34: My Submissions inside My Account**
Users can withdraw workflow submissions by clicking on the **Withdraw Submission** link. By this action, the content will be released from the workflow engine, and it will change the content status to **Draft**. The **Completed** tab displays the list of completed workflow task submitted by the logged-in user.

**Summary**

The Web Content Management (WCM) system is essential with any kind of portal and site development tool. Liferay provides one of the best WCMs in a portal technology. Web content helps users to create and manage content. In this chapter, you saw the best possible ways to create and manage the web content. You even learned how to create structures and templates for the best look and feel of the content. You learned how to assign permissions for roles to allow them to access the web content features. We even explored the Web Content Display portlet and the Web Content Search portlet in detail. Liferay WCM's best feature, scheduling, was also discussed. You learned how to hide the updating process of the content from the user by using the Liferay Staging feature. The Liferay workflow allows you to make the content more accurate and correct by reviewing the content at different levels. You learned in detail about the workflow implementation and its work through the web content.

In the next chapter, you are going to learn about Marketplace, Liferay Social Office, and Targeting Content to Audience in detail.
Marketplace, Social Office, and Audience Targeting

As mentioned earlier, Marketplace is a hub for all portlets and applications. Marketplace provides leverage to share and download Liferay-compatible portlets and applications. As per the new trend, what Play Store is to mobile, Liferay's Marketplace is to enterprise portals. Marketplace provides a unique platform for developers and software organizations to develop applications/portlets for other portal users.

In Marketplace, applications can be sold or kept for free. Liferay Social Office is an application available in Marketplace. It provides a shared workspace solution that helps office teams to work collaboratively using the tools. Liferay Social Office gives the features that organizations are using in their daily activities, such as sharing knowledge and communicating among the team. Each small and big team can keep them up to date and find the right people with the right knowledge using Social Office. Social Office helps to turn collective knowledge into collective action. It has a unique feature that allows everyone in the team to work in the right context and achieve the goal.

We are going to learn more in detail about Social Office in this chapter. Audience targeting is a new feature that Liferay has come up with, which allows you to divide audiences into user segments. It basically targets specific content and creates campaigns for different user segments. Audience Targeting also provides a tool to measure the effectiveness of your campaigns. We are also going to learn search in Liferay. Search places an important role in the content management system and portal.
By the end of this chapter, you will have learned about:

- Marketplace tool uses
- Marketplace plugins and management
- Installing apps and managing them
- The Liferay Social Office portal
- Audience targeting app uses
- User segment content listing and display
- Liferay Search

**Marketplace**

Liferay 6.2 Marketplace is a hub for sharing and downloading all Liferay-compatible applications. It acts as an application store—similar to what Play Store is to Google Android phones. Liferay made marketplace a one-stop site for the release and sharing of apps among users. The best part is that small organizations have started developing useful applications for users by paying little or even free of cost. The applications can be easily downloaded through the Liferay site and even through Liferay Portal.

Now, in our example, if the Palm Tree requirement matches one of the applications in Marketplace, then it's easy to use the application rather than building it from scratch. This is similar to what we did in *Chapter 6, Blogs, WYSIWYG Editors, and Social Networking*, where we downloaded a social networking application. Please refer to *Chapter 6, Blogs, WYSIWYG Editors, and Social Networking*, to search for an application and install the application in Liferay Portal.

Marketplace apps are validated by the Liferay team before they are released in Marketplace.
As mentioned earlier, Liferay Marketplace can be browsed over the site https://liferay.com/marketplace without signing into the Liferay site; refer to the following screenshot.

![Figure 10.1: Marketplace view on the Liferay site](image)

If you want to purchase and download the apps, you need to log in to the liferay.com site. Once you purchase the app through the Liferay site, you will get an .lpkg file, which can be directly copied to the deploy folder in your Liferay server. After deploying the application, it will get installed in your Liferay instance. It’s easier to download and install apps from Marketplace through a running Liferay instance. Once you have purchased the app, you just need to install it by clicking on the Install button, similar to what we did in Chapter 6, Blogs, WYSIWYG Editors, and Social Networking, for downloading the social networking app.

In Marketplace, you will find lots of apps from Liferay as well as from different organizations and users, and some apps are available free of cost or can be purchased by paying a small amount. You can purchase an app in your name or a company’s name from liferay.com. Once you have purchased an app, you’re free to download and install any available version of the app whenever required.
Exploring Marketplace in the Liferay site

Let's have a look at the Marketplace site page. In the preceding screenshot, you will be able to see **Search bar, Category, Portal Version**, and **Price** with a **Search** button. You will see a categorized list of apps. Now, if you want to search a particular application, say **Web Form** of **Liferay 6.2 CE GA** of the portal version. That is very simple. Just input **Web Form** in the search bar, select the category as **Productivity** from the dropdown, select **Liferay Portal version**, and finally click on the **Search** button. You can even select **Price** (**Free/Paid**). Follow this screenshot:

![Figure 10.2: Marketplace searching application](image)

Accessing Marketplace always needs the log in to the liferay.com domain. If you don't have an account, you need to sign up for liferay.com and create an account.
After searching, you will get the results page with a list of applications. Click on one of the applications, say **Web Form CE**. It will open a Web Form detail page, where every bit of information about **Web Form CE** is mentioned. Refer to the following screenshot:

![Figure 10.3: Marketplace profile page](image)

As you click on the **Free**/**Buy** button from the right-hand side panel, the purchase window will appear. After that, select **New Project** or select **For Personal Use Only**, check the agreement checkbox, and click on **Purchase**.
Marketplace, Social Office, and Audience Targeting

After purchasing the app, the purchase page will open, from where you can download the app by clicking on the App button. This will provide you with the .lpkg file, which you can deploy to your Liferay instance.

The Purchase page also provides you with the left-hand side navigation menu. This menu consists of actions, such as Account Settings, License, Apps, Projects, and Purchase History. Let's discuss the actions in detail:

- **Account Settings**: This allows you to change your account settings for liferay.com
- **License**: This lists all the licenses that you have purchased for the enterprise version
- **Apps**: This lists all the apps that you have downloaded
- **Projects**: This displays all the projects you have added
- **Purchase History**: This lists all the purchase history of apps, with details such as Purchased date, Transaction ID, App (name), Purchased From, Project, and Amount.

When we access Marketplace from a Liferay instance, it has a similar process. Rather than downloading the app as .lpkg (Liferay package file), it allows you to install the app directly by clicking on a button. Let's explore Marketplace through a Liferay instance.

**Exploring Marketplace through a Liferay instance**

Liferay 6.2, as we have mentioned in previous chapters, is divided into sections, such as Users, Sites, Apps, and Configuration, which you can see in the control panel. Under the Apps section, you can see tools to manage applications. The actions listed under the Apps section are App Manager, Store, Purchased, Plugins Configuration, and License Manager.

Let discuss each in detail:

- **App Manager**: This allows you to access information about the apps you've installed.
- **Store**: This allows you to access Marketplace after logging in using Liferay credentials.
- **Purchased**: This lists all the apps that you have purchased from Marketplace.
• **Plugin Configurations**: This allows you to configure the apps that are installed in the Liferay instance. Here, you can make the app/portlet active or inactive, and you can also set the access permission for roles.

• **License Manager**: This maintains the license for Liferay Enterprise Edition and also provides the server information for Community Edition. It even allows registering the application using the order ID.

In the following screenshot, you can see the Apps section inside Control Panel:

![Figure 10.4: Apps section in Control Panel]

Marketplace can be accessed through Store by entering the Liferay.com credentials, which will link to this administrator’s account. After logging in to liferay.com through Store, you will land in the Marketplace site of Liferay. Now, you can browse and search for any applications. The following screenshot displays the login form to access Marketplace.

![Figure 10.5: Login form to access Marketplace inside Control Panel]
After successful login, you will be able to access the same Marketplace web page inside Apps Store, and you can browse and search for the Web Form app. Then, click on the app name (Web Form) — the Marketplace profile page will open. Clicking on the Free button allows you to navigate to the purchase page, where you can mention the Project Name or select the For Personal Use checkbox, check the agreement, and finally click on the Purchase button. Once you have done the purchase of the app, it will be listed in the Purchase tab. You can click on the Purchase tab, search for the respective app in the list, and click on the Install button. It will take a while to install. After installation is done, the button will be renamed as uninstall. If you want to uninstall the app, you can simply click on the Uninstall button, which will remove the app from the current Liferay instance. Sometimes, you download an app that is not compatible with the current Liferay instance, and then it shows the Not Compatible message. Refer to the following screenshot:

![Purchased Apps inside Control Panel](image_url)

Figure 10.6: Purchased Apps inside Control Panel

In the preceding screenshot, you can see that the Social Office app is installed and that the Device Reorganization app is not installed. The Solr Search app is not compatible with the current Liferay instance, hence it's showing the Not Compatible message.

### Creating and uploading apps in Marketplace

To create the app, you can create portlets, themes, layouts templates, hook plugins, web plugins, and OSGi bundles. Let's describe each of them in brief.

**Portlets**

Portlets are web applications that run on the portlet life cycle in the portal. The main functionality in the portal is its portlet application that runs on it. The portlet resides in the portlet container and performs the job until the life cycle ends. You can develop portlets using the Model-View-Controller design pattern, which is basically provided by many frameworks. You need to use the Liferay software development toolkit to develop your own portlet plugin.

**Themes**

Themes are also plugins and can hot deploy into the Liferay instance. Themes are mainly for the look and feel of the portal—we can say it's a wrapper of design over the portal. You can create your own theme plugin using the Liferay software development toolkit.

**Layout templates**

Layout templates make your portlets arranged properly on the portal page. It's a kind of structure of the page that makes a placeholder for the portlets. In this placeholder, you can drag and drop your portlets.

**Hook plugins**

Hook plugins are used to modify the exiting code by slightly tuning it as per our requirements. The Hook plugin allows you to change the eventing system, model listeners, portal properties, language properties, and even Liferay's core JSPs. It proves very helpful in developing portals by changing the Liferay code JSPs that does not cause migration issues in the future. Also, hooks are hot deployable.

**Web plugins**

Web plugins are Java EE web modules that can be integrated into Liferay. Liferay supports third-party integration very smoothly with the help of Enterprise Service Bus (ESB).
OSGi bundles

Liferay 6.2 has come up with a new framework, **Open Services Gateway initiative (OSGi)**, to develop modular Java applications. It's similar to regular web Java applications, but it should include additional metadata so that it is capable of running in an OSGi framework. Liferay is going to release an app based on the OSGi framework shortly.

App Manager

As mentioned earlier, **App Manager** lists all the applications that are installed in the current Liferay instance. It has two tabs: **Manage** and **Install**. **Manage** lists all the applications installed in the current running Liferay instance in different categories. **Install** allows you to install portlets and apps by uploading the LPKG or WAR files. Refer to the following screenshot:

![Figure 10.7: Installing apps through App Manager](image)

You can choose the LPKG or WAR file and click on the install button. It will install the app in the currently running Liferay instance.

Liferay Social Office

Liferay Social Office is a social collaboration solution for the organization that makes communication easier, saves time, and builds teams among the employees, and it also helps in raising productivity. Let's point out the features of Social Office:

- Enhancing your existing personal workflow with social tools
- Keeping your team up to date with information
- Getting skilled persons for the right task
- Transforming collective knowledge into collective action
Social Office provides the team with tools and applications to enhance work, share knowledge among the team, and increase productivity. Moreover, the user interface is intuitive, with familiar and convenient desktop conventions that won't require a steep learning curve or any at all. It provides visibility to the team activity so that each user's correspondence and relationships happen in the context of a shared collaborative effort. Not only does this cut down on the time needed for daily syncing up and make time for more meaningful conversation, this makes the team members' focus change from their own task to the bigger picture objectives of the project. Social Office also allows teams members to work on the right context using the tools for document sharing, knowledge sharing, and collaboration tools—all seamlessly integrated.

Social Office is also an app on Liferay Marketplace that you can install into your current Liferay instance. Follow the preceding Marketplace steps to install the Social Office app into your Liferay instance. After installing Liferay Social Office, you will get two site templates under the Sites section in Control Panel. As you know, the site template can be used to create a new site, and it can also be mapped to the user's private or public pages, also known as personal site.

Under Site Template, two templates are created with the names Social Office User Home and Social Office User Profile, respectively. Using these site templates, map the user's Public page and Private page with the Social Office User Profile site template and the Social Office User Home site template, respectively. Whenever you click on My Profile from the dock bar, the Social office User Profile page opens in the same way as when you click on My dashboard from the dock bar, Social Office User Dashboard opens.

Map the user's Public page with Social Office User Profile, which is nothing but the My Profile link in the dock bar. Map the user's Private page with Social Office User Home, which is nothing but the My Dashboard link in the dock bar.

The other way of using Social Office in the portal is by creating sites for different site templates. This site will be common to all users. Create sites by using the Social Office User Home and Social Office User Profile site templates. After creating the sites, you can assign the users, organization, and user group for Control Panel | Configuration | Social Office Configuration. You can set the roles and sites settings for the site type.

Let's explore this scenario with an example.
My Profile

My Profile is the public page that basically has the user's information. Other portal users can access this page to get information about the user and their activities on the portal.

Click on the My Profile link in the dock bar, which will open the public page of the user. My Profile is now Social Office user profile, which has a different theme and layout; refer to the following screenshot. It also has the prefect arrangement of portlets that makes Social Office easy to use for the end user.

Observe the following screenshot. It's a My Profile page of Vishal Gupta. It has the left-hand side navigation menu bar with different pages, such as Profile, Contacts, Microblogs, and Home. In the middle column, you will able to see the user's status message, information about the user, and their projects. In the right-most column, Sites details and Tags of the user are listed.

![Figure 10.8: My Profile page as a Social Office user profile](image.png)
In the preceding screenshot, you can see the dock bar on the left-most side that allows you to add pages and applications to the page. You can even modify the layouts as required by changing certain properties:

Let's understand the different pages in brief:

- **Profile**: This provides user information, with all the details and activities the user has performed. Refer to the preceding screenshot.

- **Contacts**: This lists all the contacts you are connected to. It's a kind of phone directory with extra actions on each contact, such as **Disconnect**, **Follow**, **Block**, **Message**, and **vCard**. Refer to the following screenshot:

  ![Contacts in My Profile page](image)

  **Figure 10.9: Contacts in My Profile page**

  When a user from your contacts, say Sachin Agarwal, views your profile page, they can view your contacts with the same action for each contact, by which they can extend their contact list by sending connect requests. This is similar to any social media site.

- **Microblogs**: Here, you can update you micro status and share with the teams easily. Refer to **Figure 10.8**. The status **Guys start using Social Office .. Its awesome !!!** is a microblog.

- **Home**: This is a normal Liferay page link.
My Dashboard

My Dashboard is the user's private page that is mapped with the Social Office user's home page. Clicking on My Dashboard from the dock bar menu will redirect your user's dashboard page. The next screenshot shows the user's dashboard.

The dashboard allows the users to interact with the system easily. It provides the user with all the information in one place. Here too, users get the most of the information in one page, such as announcements, activities, upcoming tasks, and events. These applications make the user's dashboard very useful when each individual wants to get an update every second in the team.

My Dashboard comes with several pages, such as Dashboard, Contacts Center, Microblogs, Messages, My Documents, Tasks, Home, and Wiki. Let's discuss each page in detail:

- **Dashboard**: This provides a single-page interaction with information on the page for the user. The following screenshot shows the dashboard of Vishal Gupta:

![Dashboard Screenshot](image)

Figure 10.10: Social Office user home as Dashboard
The preceding screenshot shows the activities of different tabs, such as **All, Connections, Followings, My Sites, and Me.**

- **Contacts Center:** This provides you with the user's directory: you can find on the left-hand side a list of the user contacts and the user's details on the right-hand side panel of whoever is a member of this site (next screenshot). You can even directly send the connect request, follow the contact, block the contact, and message the contact.

![Figure 10.11: Contacts Center](image)

Also, you can download the vCard of the contact, that is, the `.vcf` file, and save the contact in a third-party software.

- **Microblogs:** Here, you can update your micro status and share it with the teams easily.
- **Message:** This lists all the messages you received from your contacts. You can even send the new message to your contact.
- **My Documents:** Here, the Documents and Media portlet is placed, which helps the users to upload their personal documents and media files. It stores the documents and files in the user's personal site scope. Basically, a user can maintain their personal documents and media.
• **Tasks**: This provides users the ability to create to-do lists with due dates. This is displayed in their **Profile** page and **Dashboard** page. See the following screenshot for tasks:

![Tasks Screenshot](image)

Figure 10.11: Users Tasks

Users can create tasks and assign them to other contacts too. This makes it easier among the team to be updated about the task assigned by your superiors.

• **Home**: This is a normal Liferay page containing portlets such as Message Boards, search, user statistics, and upcoming events.

• **Wiki**: This is again a normal Liferay page that contains the wiki and tag cloud portlets.

**Social Office Configurations**

When we install the **Social Office** app, it also creates a configuration interface for the portal administrator under **Social Office Configurations**. This configuration interface allows the portal administrator to set the Social Office users, organizations, and user groups. It also allows the setting of **Roles** for **Social Office Users** and **Sites** for different types of sites.
When you create a separate Social Office site for all the users, then the configurations settings can be done appropriately for users, organizations, and user groups.

Let's do Social Office configurations for a site that has a Public page Social Office User Profile and a Private page Social Office User Home. Social Office Configurations has two tabs: Assign Social Office and General. The following screenshot displays Social Office Configurations:

![Social Office Configurations](image)

Figure 10.13: Social Office Configurations—Assign Social Office

As you can see in the preceding screenshot, the Assign Social Office tab is selected, which prompts you to assign Users, Organizations, and User Groups for Social Office. You can just search for the users in the list, select it by checking the checkbox, and finally click on the Save button. In the same way, you can assign Organizations and User Groups.
**General** settings are basically for **Role** and **Sites**. It allows you to set the Social Office users role for Add Sites. You can select the site type, which can be added by default through the Sites application at the time of creating the site. The options for site type are **Open**, **Public Restricted**, **Private Restricted**, and **Private**. The following screenshot provides the Social Office Configurations screen:

![Social Office Configurations—General settings](image)

In the preceding screenshot, you can see that we have set the default site type for all.

### Targeting content to audiences

Targeting content to audience is a robust application for the end user to experience. It's a new app feature by Liferay 6.2 known as Audience Targeting. The Liferay Audience Targeting app is available to both community and enterprise editions in Marketplace. This app allows you to divide your audience into user segments and target specific content to specific user segments. You can also create campaigns for different user segments. It also allows you to analyze the campaigns very effectively with the analytics program. You can configure user segments by setting the website to display different assets to different users. Campaigns allow you to set specific content to be displayed to different user segments for fixed time periods. It also allows you to extend the communication to the targeted user segments with the selected content.
Let's say that in Palm Tree Publications, the marketing team needs to target the online customer by publishing the advertisement content. To increase the sale, the marketing department needs to target the customer on the basis of their interest, say advertisements related to Java books will be targeted only at the developer user segment and advertisements related to management books will be targeted only at the manager user segment. This will help the marketing team to achieve its goal. You can create multiple user segments for different types of audiences, which are defined by multiple rules based on session attributes, profile attributes, behavior, and information from social networking. You can write your own custom rules and rule types with minimal coding. After installing the Audience Targeting app, it adds an Audience Targeting section to the Configuration section of Site Administration Panel of Control Panel and also add an audience targeting simulator to the dock bar. The app also provide a few more applications to work with.

It also provides a few more applications: User Segment Content Display, User Segment Content List, and Campaign Content Display. Now you can add these applications to any page to display the content. After that, you can configure it through Site Administrator Panel | Configuration | Audience Targeting.

### Installing and uninstalling the Audience Targeting app

As mentioned, you can install it from Marketplace, which has Community Edition and Enterprise Edition for Liferay 6.2. Simply follow the preceding steps to install apps from Marketplace.

To uninstall Audience Targeting from the Tomcat server, follow these steps:

1. Delete the Work and Temp folders from the currently running Liferay instance of your server. The folder locations are [Liferay Home]/tomcat-[version]/work and [Liferay Home]/tomcat-[version]/temp.
2. Delete OSGi folder from the following location: [Liferay Home]/data/osgi.
3. Restart the server.

Finally, the Audience Targeting app will not get initiated when the server starts.
User segment management

Audience Targeting is focused on specific sites. When the user visits a particular site, Audience Targeting activates and performs its operation on the content based on the rule defined for the user segment. In Site Administration Panel | Configuration | Audience Targeting, you will be able to manage the user segments and campaigns.

Figure 10.15: Audience Targeting—Creating User Segments
User segments address mainly the portal users in the database (logged in or not). The user segment is defined by one or more rules, one of which the user has to match in order to belong to the specific user segment.

To add a new user segment to Audience Targeting, follow these steps:

1. Log in as Site Administrator.
2. Click on Audience Targeting from the left panel, which is under the Configuration section.
3. The Audience Targeting page will open listing all the User Segments created for this particular site.
4. Click on the Add User Segment link; it will open up the form similar to the previous screenshot.
5. Now, fill in the Name and Description.
6. All the rules deployed appear under the Rules heading, which you can drag and drop on the right-hand side to apply the rule to the user segment.
7. Now after applying the rule, configure the rule's parameters, just as you applied the gender rule to select Male or Female, to complete the rule.
8. After configuring the rules, set the permissions for the user segment. For now, keep the default permissions.
9. Finally, save the user segment by clicking on the Save button.

The following screenshot displays the list for the User Segment list:

![Audience Targeting — list of User Segments](image)

Figure 10.16: Audience Targeting — list of User Segments
Note that if you configure Audience Targeting in Global Scope, then all the sites will inherit it and the user segments and campaigns will be available to all. In the same way, when you configure Audience Targeting in the parent site, all the child sites will inherit it and the user segment and campaigns will be available to all.

Liferay has provided certain default user segment rules that are included with the app:

- **User Attribute**: This is basically for the user attributes, defined as age, gender, role, and membership
- **Social**: This is basically for social media, which is defined as a specific Facebook page, number of Facebook friends, city, age, gender, education, and other data taken from the Facebook profile page
- **Session Attributes**: This is basically based on the geographical location (obtained from the IP address), browser, device, operating system, and finally time
- **Behavior**: This is based on the viewed page or content and the score points rule

You can create your own custom rules developed as an OSGi plugin, which you can deploy in the server.

**Understanding User Segment rules**

Liferay has enabled developers to create their own custom rules deployed as OSGi plugins.

The rules that are available to create user segments are as follows:

- **User Attribute**: This includes Age (the value will be taken from the user profile), Gender (the value will be taken from the user profile), Role (regular role, organization role, or site role), and Membership (Site member, Organization member, User Group member)
- **Social**: This is similar to a specific Facebook page, number of Facebook friends, and values fetched from the Facebook profile page, such as city, age, gender, education, and so on
- **Session Attributes**: This obtains your location from the IP address, browser, device, operating system, and time
- **Behavior**: This is the viewed page or content and the score points rule
Liferay Audience Targeting provides you with two Select buttons in the page section. After selecting the page, you will see User Segments and User Segment (Global) in categorization and assets settings. Using this button, you will able to set one or more site scopes or global user segments to the content.

**Managing campaigns**

Liferay provides a feature with which you can manage campaigns. A campaign is defined as an effort to expose a set of assets to a certain user segment within a specific period of time. Let's add *Campaign* to our site by following these steps:

1. In Site Administration Panel, select *Audience Targeting*, and click on the *Campaign* link.
2. Click on the *Add Campaign* link and fill in Name and Description (optional).
3. Then, select the user segment to target a start date and an end date.
4. Indicate whether the campaign is active or inactive.
5. Finally, save the campaign.

There can be multiple campaigns active at the same time that target the same user segment. It takes the priority attribute of the campaigns, that is, which campaign takes precedence.

You can also deactivate the campaign whenever you want. Deactivating a campaign is similar to deleting the campaign except that a deactivated campaign can be reactivated later.

You can also manage campaign priorities when multiple campaigns are running at the same time on your portal site.

Finally, you will have a *Campaign* report, which will show you the details as to how many times the content has been displayed to users.

The Liferay Audience Targeting application provides different display portlets for the purposes of displaying content to the targeted users of the site. The portlets are available with their names as follows:

- User Segment Content Display
- User Segment Content List
- Campaign Content Display
All these portlets are instanceable and support Application Display Templates (ADTs) for the look and feel of the content. You can configure these portlets to display content according to the rules that you have defined for User Segment and Campaign.

Search
The Search Liferay 6.2 bundle is integrated with the Lucene search framework, which provides the search and indexing functionality for the whole portal. Lucene search converts the searchable entities into documents that are custom objects corresponding to searchable entities. So, whenever the Lucene index is searched, a hits object is returned that contains pointers to the documents that match the search query. Searching for any query using an index will be much faster than searching for entities in the database if an indexed document contains the data as per your requirement.

The Lucene search mechanism totally depends on the index documents. First, it finds an indexed document with specific fields for specific values. Once you get the matching document in the index, it makes it easy for you to retrieve the values of any other fields of the matching documents. Moreover, if you need to, run the database query to retrieve the entities that correspond to the indexed documents. This query will be less expensive than the database query done without indexed documents.

Let's understand some search and indexing keywords:

- The Search index contains a collection of documents that are Java-based objects that represent entities that has been saved to the database.
- Each document contains a collection of fields and their values. Fields represent the metadata about each document link title, content, description, created date, tags, and so on.
- Fields can be single-valued or multi-valued. A single-valued field can have only one term, and a multi-valued field can have multiple terms. A term is defined as a single, non-whitespaced value that can be searched easily.
- A phrase is a series of terms separated by spaces. You can use a phrase as a term in a search by surrounding it with double quotes.
- The result of a search is a collection of hits, which generally are pointers to documents that match the search query.
You can implement the Lucene search and indexing in your custom portlet using the Apache Lucene APIs. Follow these steps for implementing search and indexer in your custom portlet.

1. In your custom portlet, create the `Indexer` class and make an entry in the `liferay-portlet.xml` file. Something similar to the following line of code for the class `AssetIndexer` inside Asset Publisher portlet needs to be entered:

   `<indexer-class>com.liferay.portlet.assetpublisher.util.AssetIndexer</indexer-class>`

2. Run the service builder to update the entity service layer to make sure that the index is updated with the creation, modification, or deletion of an entity.

3. Now, in the JSP, you need to create a search bar, and in another JSP, you should have the result page. You can even configure the Liferay default search portlet with your custom portlet.

You will find many Liferay out-of-the-box portlets where the Search portlet allows the searching of Liferay assets, the list of which is as follows: Users, Blog posts, Document and Media folders, Document and Media files, Web Content folders, Web Content files, Message Board Messages, Wiki pages, and so on.
Faceted search

Faceted search is a search mechanism that allows you to set the filter on the search query to narrow down the search result. It's faster and easier for the user to locate their desired result at the top. Liferay's Search portlet is created based on faceted search, which contains several facets, such as Site, Asset Type, Tag, Category, User, Folder, and Modified Date. When you do the search in the Liferay Search portlet for any search term, it displays the result set. The following screenshot displays the search result set with the left-hand side panel, which allows you to refine your search by clicking on one or more facets to apply a search filter.

![Search portlet result page](image-url)

Figure 10.17: Search portlet result page
If you see the preceding search result, it searches the term throughout entire sites. You can do the filter for a particular site by selecting the site facets, say "Palm Tree". The result will be filtered based on the Palm Tree site.

Note that each facet in the left-hand side panel has a number beside it, which is nothing but the number of search result values for a particular search term.

For a better understanding of faceted search, you should need to know the terms associated with faceted search:

- **Facet**: This is a group of information bits about specific indexed fields, their terms, and their frequencies.
- **Frequency**: This is used when a term appears within a set of documents multiple times.
- **Term Result List**: This is a list of information bits about a specific facet.
- **Frequency Threshold**: This is the minimum value for a frequency required for a term to display in the search-result list. If the frequency threshold of a facet is set to 4, then a term should be appearing more than 4 times; otherwise, the result list won't be displayed.
- **Max Terms**: This keeps the search results under control by setting the value for the maximum number of terms to be shown in the result list regardless of the total larger list.
- **Order**: This displays the result list in ascending order and descending order.
- **Range**: This defines the range for the search term matching frequencies. For example, if you define a range for a search term, that is, a modified date range between the years 2010 and 2015, it will display that search list for the modified date of the same range.

### Configuration of the Search portlet

Administrators can configure the Search portlet as per their requirements. It provides full control for the left facet menu panel, which comes under Basic settings, where you can include and exclude any facets you want. It also allows you to enable **Spelling Check** features, **Display Related Queries**, and **Add New Related Queries Based on Successful Queries**. Even in other settings, the administrator can enable and disable **Display Results in Document Form**, **View in Context**, **Display Main Query**, and **Display Open Search Results**.
You even have an option for Advanced settings for facets, where you need to modify the JSON as per your requirement. The following screenshot displays the Search portlet's configuration settings:

![Search - Configuration](image)

Figure 10.18: Search portlet configuration
Summary
Marketplace is a one-stop hub for apps. You can find apps related to the community and enterprise editions for different servers. Apps from Liferay and different organizations are available in Marketplace; even individual developers can upload apps. Installing apps from Marketplace is very convenient for end users. Liferay Social Office is also available in Marketplace. It is a good collaboration interface for the team in one organization. Liferay Social Office will help team growth and productivity. It provides robust features for the team to grow in an organization. Social Office, when integrated with Liferay Portal, makes the members involved in communication. This is the best product to help managers to assign work to team members. The Audience Targeting app is a new feature from Liferay. This app allows you to divide your audience into user segments, target specific content to specific user segments, and also create campaigns for different user segments. It also allows you to analyze the campaigns very effectively with the analytics program. You can configure user segments by setting the website to display different assets to different users. Campaigns allow you to set specific content to be displayed to different user segments for fixed time periods.

In the next chapter, we will look at the server administrator area. In the next chapter, you will learn about Liferay Server Administration, Performance Tuning, Liferay Connected Services, and Updates of Liferay 7.0.
Server Administration

Liferay Server Administration allows you to handle the Liferay Portal server by monitoring different areas within the server. The Liferay Portal server is so huge that the administrator needs to monitor it and configure it with the required settings to keep the portal server running smoothly. Apart from the other tools that the server administrator uses, such as JProfile, or any Java performance-monitoring tool to monitor the memory for JDK, they need to keep an eye on the logs and Liferay properties that are configured. The Liferay bundle itself comes integrated with a lot of programs that are required to be monitored.

The server administrator’s responsibility towards the Liferay Portal server is to handle the server performance, configure the Liferay Portal server settings, monitor the server through Liferay Cloud Services, create a Liferay Cluster environment, and so on. In this chapter, we are going to discuss the server administration part, which will allow the administrator to handle the server properly and keep it healthy always so that the users never face performance issues while accessing the portal.

By the end of this chapter, you will learn how to:

- Set up the Liferay administrator
- Configure the server properties, data migration, and set the properties for uploading a file
- Set up e-mail configuration and set up external services
- Create multiple portal instances
- Do performance tuning of your JDK to improve the server performance
- Set the Content Delivery Network for your server
- Explore Liferay Cloud Services
- Create multiple Liferay cluster environments
- Get new updates about the Liferay 7 portal
Liferay server administrator

Liferay Portal provides an interface to handle the server resources. You can perform various tasks related to the portal server. In Control Panel under Configuration, you will find Server Administration, which allows you to define settings and execute commands on the server. Under Server Administration, there are a few tabs with the names Resources, Log Levels, Properties, CAPTCHA, Data Migration, File uploads, Mail, External Services, Script, and Shutdown. Now, let’s discuss each of them in detail.

Resources

Resources provides you with different actions on the server that only the portal administrator can execute. Refer to the next screenshot and the actions that administrators execute to improve portal performance:

- **Run the garbage collector to free up memory.** This allows you to send requests to the JVM to call the garbage collection task.
- **Clear content cached by this VM.** This allows you to send requests to the JVM to clear content stored in the local cache.

![Figure 11.1: Server Administration in Control Panel—Resources](image)
• **Clear content cached across the cluster.** This allows you to send requests to the JVM to clear the content cached across the entire cluster.

• **Clear the database cache.** This allows you to send a request to the JVM to clear the database cache. This action only clears the database result cache.

• **Clear the direct servlet cache.** This allows you to send a request to the JVM to clear the direct servlet cache. The direct servlet cache is a feature that optimizes JSP serving performance by caching and accessing the servlets generated directly instead of accessing them over the application server's dispatcher chain.

• **Reindex all search indexes.** This allows you to send a request to regenerate all search indexes. It will impact the portal performance if you are not using the Solr search server, so try to do this at nonpeak times.

• **Reindex all spell check indexes.** This allows you to send a request to regenerate all spellcheck indexes.

• **Reset preview and thumbnail files for the Documents and Media portlet.** This allows you to send a request to reset the thumbnail and preview files for each item in your portal's Documents and Media libraries.

• **Generate thread dump.** This allows you to take a thread dump to examine later and determine whether there is any kind of deadlock.

• **Verify database tables of all plugins.** For the accuracy of data retrieval, you can check all the tables against their indexes.

• **Verify Membership Policies.** This allows you to correct the membership policies for all the users in the site. Suppose that someone has manually changed the Liferay database, resulting in a user being assigned to a site in violation of a site membership policy. When you execute the action, it verifies methods of all the site membership policies that have been implemented. It checks that all the site membership is in accordance with site membership policies; otherwise, the necessary changes are made.

• **Clean up Permissions.** This process removes the assignment of some permissions on the Guest, User, and Power User roles to simplify the management of "User Customizable Pages". Notably, the "Add To Page" permissions are removed from the Guest and User roles for all portlets. Likewise, the same permission is reduced in scope for Power Users from a portal-wide scope to "User Personal Site".
Log Levels

Log Levels allows you to dynamically change the log levels for any class hierarchy in the portal. To add a new or custom class hierarchy, you can simply add it through the Add Category tab. Once you change the log level of the top-level class hierarchy, it will be implemented to all the classes under that hierarchy. It makes the developer's life easy while developing any application. The developer can enable the log levels for their custom classes to find out the issues. The following screenshot shows the log level for the different classes:

![Figure 11.2: Server Administration in Control Panel — Log Levels](image)

In the preceding screenshot, each class has a different category of log level, such as OFF, FATAL, ERROR, WARN, INFO, DEBUG, and ALL. If you want to change the log level of any class, just choose the log category and click on the Save button.

The Add Category tab allows you to add the category and its level, for example, you need to set the custom class with the full package name (com.<companyDomain>.<projectName>.<action>.<ClassName>) in the first textbox, select the level, and finally save the settings. After saving the settings, it will be listed in the updated Category list.
Properties
Liferay and JVM define many settings as properties. There are two properties tabs: one is System Properties and the other one is Portal Properties.

The System Properties tab displays the list of System Properties for the JVM as well as Liferay System Properties; refer to the following screenshot:

![Figure 11.3: Server Administration in Control Panel—System Properties](image)

The Portal Properties tab lists all the portal properties of Liferay Portal; refer to the following screenshot. These properties can be changed in `portal-ext.properties`.

![Figure 11.4: Server Administration in Control Panel—Portal Properties](image)
The information about properties is provided to be used while debugging or checking the configuration of the currently running Liferay Portal.

**CAPTCHA**

Liferay provides a simple CAPTCHA service that is designed to thwart bots from registering for accounts on sites. You can also choose to use the Google reCAPTCHA service. You can enable these settings by providing public and private keys for reCAPTCHA. The portal will use the new reCAPTCHA rather than Liferay's simple CAPTCHA. Refer to the following screenshot to set reCAPTCHA:

![Figure 11.5: Server Administration in Control Panel—CAPTCHA](image)

**Data Migration**

This tab is used to migrate data from one system to another. Liferay makes it easier for the administrator to migrate data without any script.
In the following screenshot, you can see that it's divided into two sections. The first section allows you to specify database settings and copy the entire Liferay database that is running.

Now, let's migrate your documents in the next section. It provides you with different options to move your documents and media, such as Advance File System Store, CMI Store, DB Store, JCR Store, and S3 Store. You even need to set up the portal-ext.properties file so that the hook is properly configured before running this migration. In the Document Library hook, set the location to which you want your documents to be migrated and then click on Execute. Your document will be migrated to the new repository. Shut down the server, make the new repository the default in the portal-ext.properties file, and finally restart the server.
**File Uploads**

The **File Uploads** tab allows you to define the settings' overall maximum file size and then override the size for specific applications within Liferay Portal. Here, you can also restrict the file type and its size. Here's the list of applications for which file upload settings are used: **Document and Media**, **Web Content Images**, **Shopping Cart Images**, **Software Catalog Images**, and **User Images**. You can also limit the allowed file extensions for the entire portal or for individual applications. Portal Administration has a lot of flexibility for setting up the file upload and managing files within Liferay Portal.

**Mail**

Liferay provides the flexibility to the portal administrator to configure the mail settings in **Control Panel** as well as in the **portal-ext.properties** file. Defining settings for mail configuration inside **Control Panel** is better rather than doing it in the **portal-ext.properties** file. Mail settings can be done for POP servers (incoming mails) and SMTP servers (outgoing mails).

**External services**

External services enable the portal administrator to configure third-party tools, such as ImageMagick, OpenOffice, and Xuggler. Whenever users upload the file to Documents and Media, the preview of certain types of documents is generated automatically since Liferay comes with PDFBox by default. To improve the preview that provides higher quality, you can configure ImageMagick, OpenOffice, and Xuggler. Using these tools, you can generate automatic previews for several types of files including text files, office suite files, PDFs, images, audio files and video files.

For Liferay 6.2, it's better to install the latest stable version of Open Office [https://www.openoffice.org](https://www.openoffice.org), ImageMagick [http://www.imagemagick.org/script/index.php](http://www.imagemagick.org/script/index.php), and Xuggler [http://www.xuggle.com/xuggler](http://www.xuggle.com/xuggler). Xuggler can be installed from the external services interface of **Control Panel**. After you have installed these tools, you can proceed with the configuration of external services.

**Configuring ImageMagick**

Installing ImageMagick on your operating system includes the installation of Ghostscript; now you need to configure Liferay to use ImageMagick. Liferay provides you the option to do the configuration either in **portal-ext.properties** or from **Control Panel**.
In the portal-ext properties file, add the following lines of configurations. Make sure that the search points to the directories for the ImageMagick and Ghostscript executables:

```properties
imagemagick.enabled=true
imagemagick.global.search.path[apple]=/opt/local/bin:/opt/local/share/ghostscript/fonts:/opt/local/share/fonts/urw-fonts
imagemagick.global.search.path[unix]=/usr/local/bin:/usr/local/share/ghostscript/fonts:/usr/local/share/fonts/urw-fonts
imagemagick.global.search.path[windows]=C:\Program Files\ImageMagick
```

In Control Panel, navigate to External Service under Server Administration, check in to enable ImageMagick, and input the correct path for the ImageMagick and Ghostscript executables.

### Configuring OpenOffice and LibreOffice

OpenOffice and LibreOffice are both open source applications that allow you to run in server mode, thus allowing you to convert documents to and from of all the different types. After configuration, Liferay uses these features to automatically convert content on the fly. Installation of OpenOffice or LibreOffice can be done to the same machine in which Liferay is running, or you can even have a separate host.

When you've installed OpenOffice or LibreOffice on the same machine where Liferay is running, you can start it in server mode by following this command:

```bash
soffice -headless -accept="socket,host=127.0.0.1,port=8100;urp;" -nofirststartwizard
```

Once OpenOffice or LibreOffice has started in server mode, you can configure from the Liferay Control Panel or by setting the properties in portal-ext.properties.

Set the following property in the portal-ext.properties file to enable OpenOffice:

```properties
openoffice.server.enable=true
```

Set the server host and port of OpenOffice or LibreOffice even if it is running in the same server:

```properties
openoffice.server.host=127.0.0.1
openoffice.server.port=8100
```
When OpenOffice or LibreOffice is integrated with Liferay, it uses the caching mechanism to store the converted document. Liferay also uses it when the user tries to convert the same document again. When a request comes for a fresh document, it directly generates it; otherwise, it checks in the cache memory temp folder and returns it to the user. You can disable the cache by setting the following property in the portal-ext.properties file:

```
openoffice.cache.enabled=false
```

You can define the same settings in Control Panel | Server Administration | External Services.

### Configuring Xuggler

Xuggler helps you to play audio and video files in Documents and Media. You can install and configure it through Control Panel under External Services of Server Administration. Select the specific Xuggler.jar file that matches your operating system and then click on Install.

After installing Xuggler, restart your server, and then enable Xuggler from Control Panel, or set the property in the portal-ext.properties file:

```
xuggler.enabled=true
```

### Script

Liferay provides you with the scripting console, which allows administrators to execute migration or management code instantly with one click. This scripting console is capable of running several scripting languages, such as Ruby, Python, Groovy, JavaScript, and Beanshell. Refer to the following screenshot for the scripting console:

![Figure 11.7: Server Administration in Control Panel—Script](image-url)
The code in the preceding screenshot prints the number of users available within the portal. If you want to update each user in the system to set their agreedToTermsOfUse attribute to false and skip the default user, follow this code:

```java
import com.liferay.portal.service.UserLocalServiceUtil
userCount = UserLocalServiceUtil.getUsersCount()
users = UserLocalServiceUtil.getUsers(0, userCount)
for (user in users){
    if(!user.isDefaultUser() &&
        !user.getEmailAddress().equalsIgnoreCase("test@liferay.com")) {
        user.setAgreedToTermsOfUse(false)
        UserLocalServiceUtil.updateUser(user)
    }
}
```

Note that when the script code accesses Liferay Service Layer, you should be alert and keep a few points in mind while working with the script console:

- There is no preview or undo
- Scripts run synchronously; be careful with scripts that might take a while to execute
- While using the Local Service, no permission checks are enforced

You can use the script console to test your code while developing any portlet.

### Shutdown

Liferay provides a simple way in which you can shut down your Liferay Portal server while users are logged in. The Shutdown tab allows you to set the number of minutes until shutdown and a custom message that will be displayed.

Once the Server Administrator clicks on the shutdown button after defining the two fields, logged in users will be able to see the message at the top of their portal pages. When the given time expires, all the pages in the portal will display a message saying the portal has been shut down.
Portal Instances

Liferay Portal allows you to configure and run multiple portal instances on a single server. The data of each portal instance is kept separately in the same database. Each portal instance should have its own domain name with which Liferay directs users to the proper instance based on this domain name. So, you need to configure the domain name before configuring or adding an instance. The following screenshot displays the list of portal instances created in the currently running Liferay Portal server.

You can add a new instance by clicking on the Add button. After that, you need to define four fields and a checkbox:

- **Web ID**: Add the domain name; it’s generally a user-generated ID for an instance.
- **Virtual Host**: Use the domain name that you have configured in your network. When users are directed to the Liferay server via this domain name, Liferay Server will be able to send them to the proper portal instance.
- **Mail Domain**: Settings to send mail notifications from the portal enter the domain name for the mail host for this instance.
- **Max # of Users**: Use the maximum numbers of user accounts the portal instance should support.
- **Active**: Check the checkbox to make the instance active or inactive.

After filling in the fields, finally save it. Now you can trigger the new domain URL that you configured; you will see that a fresh Liferay instance opens up.
Custom Fields

Liferay Portal allows the administrator to add additional custom fields to many different types of assets and resources. Custom fields are added from the Control Panel | Configuration section. Suppose you want to have a custom field for the Users resource, say the Department field, for all the users, you just need to click on the Edit link beside User and add new custom fields with the key and type of fields. The following screenshot displays the list of resources where custom fields can be implemented:

![Custom Fields in Control Panel](image)

In the preceding screenshot the Site and Organization resources already have the custom fields **Branch** and **Socialofficeenabled**. Let’s add a new custom field for the User resource by following these steps:

1. Click on the Edit link next to the User resource.
2. Click on the Add Custom Field button to add a custom field.
3. Input the Key, that is, the field name that is going to be displayed to the user, say **Department**.
4. Select the type of field for the respective fields. Liferay provides different options for the field's type. Refer to the following screenshot for the field's type:

![Selection of Text Values](image)

Figure 11.10: Custom Fields types

5. Finally, **Save** the new custom field.

The new **Department** custom field has been created for the User resource with the selection box. Under the User resource, you will find the list of custom fields created. Now, you need to set up the values for the selection box. Click on the **Department** custom field, which allows you to edit the custom field detail. In the **Values** textbox, input the values for the departments, such as **Human Resource**, **Marketing**, and so on. Also, change the value for **Display Type**, that is, **Selection List**. Finally, click on **Save** to save the **Department** custom field detail form.

Now, if you go to the individual user's detail page in **Control Panel** | **Users** section and click on **Custom Field** from the right-hand side menu. You will be able to see the new **Department** custom field with the selection box having the values **Marketing** and **Human Resource**.

**Performance tuning**

Every application is required to be tuned to improve the performance, especially when the users have increased and the site winds up generating more traffic than you anticipated. You can improve the Liferay Portal performance by changing settings in some properties files and improving the in-memory capacity.
Memory

It's a vital area for improving system performance. Whenever there is a need to optimize performance, you should first check the amount of memory space for JVM heap. There should be sufficient memory in your server, and your JVM is tuned to use it to avoid the impact due any disk swapping.

Java provides you with a few JVM command properties that control the amount of memory in the Java heap:

- `-Xms`: This sets the initial Java heap size
- `-Xmx`: This sets the maximum Java heap size
- `-XX:MaxPermSize`: This sets the permanent generation space

The preceding three settings allow you to control the memory in the Java heap. The initial heap size and maximum heap size should be set to the same value, which prevents the JVM from having to reallocate memory when the application needs more while it’s running. This also helps JVM to create the maximum amount of memory at the initial start time:

```
-Xms1024m -Xmx1024m -XX:MaxPermSize=256m
```

These settings create Java JVM 1024 MB for its regular heap size and creates a PermGen space of 256 MB, which is perfectly fine for machines nowadays or a developer machine. Whenever you face performance problems and the profiler shows that a lot of garbage collection is going on, firstly, you need to check the increase in memory available to the JVM. Monitor the profiler (NetBeans, YourKit, or JProfiler) on the server to look into memory issues. You might need to increase the memory with the garbage collection (GC) running frequently.

The moderate machines nowadays, especially with 64-bit systems, have huge memory; you can allocate large JVM memory space.

```
Note that a very large JVM memory allocation will take more time than it takes for garbage collection to take place. So, you should not create JVMs of more than 2 GB in size. The best way to achieve higher amounts of memory on a single system is by running multiple JVMs in a single Liferay instance.
```

The performance may also get affected by the PermGen space since it contains long-lived classes interned strings (immutable string objects that are kept around for a long time to increase the string’s processing performance). While increasing the JVM memory space, you might have to increase the PermGen space accordingly.
Garbage collection

The system creates various Java objects while running and storing in heap memory. Some objects are alive and have a link reference, while others are not. Garbage collection is the process of cleaning the heap memory by identifying the objects that are not in use. Note these points about garbage collection:

- Used objects or reference objects are those that have active pointers by the running program
- Unused objects or dereferenced objects are no longer referenced by any running program

The unused objects fill up the heap memory space until JVM calls garbage collection.

Figure 11.11: Java garbage collection

The preceding image has been referred from http://www.oracle.com/webfolder/technetwork/tutorials/obe/java/gc01/index.html.
The heap memory is divided into three sections: young generation, old generation, and permanent generation. The young generation is divided into three sections: Eden (where new objects are created) and two "survivor spaces", which can be named S0 and S1 spaces. In the young generation, all new objects are allocated and aged. When the young generation fills up, this causes a minor garbage collection. Minor collections can be optimized by assuming a high object mortality rate. Garbage collection runs in the young generation. Eden is swept for the object that is no longer referenced. The rest of the objects are moved to the S1 survivor space, and S0 survivor space is swept. If any other objects in the space, which still has a reference, are moved to the S1 space, the S0 space is cleared out altogether. Now, S0 and S1 swap roles and processing is freed up again until the next time the JVM calls garbage collection.

A young generation full of dead objects is collected very quickly. A few of the surviving objects are aged and eventually move to the old generation. Similarly, after a predetermined number of generations of garbage collection in the old generation, the surviving objects can be moved to the permanent generation.

JDK processes the sequence of serial garbage collectors to achieve this. This perfectly works for small and shortlived desktop Java-based applications, but it might not perform in the same way in server-based applications, such as Liferay Portal. To make our server-based application run perfectly, you may need to use the Concurrent-Mark-Sweep (CMS) collector.

The concurrent mark sweep collector is targeted at applications that are sensitive to garbage collection pauses. It performs most garbage collection activities concurrently, that is, while the application threads are running, to keep garbage collection-induced pauses short.

Then, it allows the application to run while it marks all objects that are reachable from the set it marked. Finally, it adds another phase called the remark phase, which finalizes marking by revisiting any objects modified while the application was running. It then sweeps through and collects garbage. Java can be tuned in every aspect in the way memory management design is done.

If you want to experiment with Java tuning, just follow the profiling tool and change the settings to improve server performance:

- **NewSize, MaxNewSize**: You can set the initial size and the maximum size of the new and young generations.
- **+UseParNewGC**: This makes garbage collection happen in parallel using multiple CPUs. This increases the application speed and also shortens the garbage collection process.
Server Administration

- **+UseConcMarkSweepGC**: This allows the use of Concurrent Mark-Sweep Garbage Collector, which improves the performance of larger applications by making applications pause for a while and calls the garbage collector.

- **CMSParallelRemarkEnabled**: This enables the garbage collector to use multiple threads during the CMS remarks phase. This decreases the pauses during this phase.

- **SurvivorRatio**: This controls the size of the two survivor spaces. It’s a ratio between the survivor space size and Eden. The default is 25.

- **ParallelGCThreads**: This is the number of threads to use for parallel garbage collection. This should be equal to the number of CPU cores in your server.

A sample configuration using the preceding parameters might look similar to this:

```
JAVA_OPTS="$JAVA_OPTS -XX:NewSize=700m -XX:MaxNewSize=700m -Xms2048m -Xmx2048m -XX:MaxPermSize=128m -XX:+UseParNewGC -XX:+UseConcMarkSweepGC -XX:+CMSParallelRemarkEnabled -XX:SurvivorRatio=20 -XX:ParallelGCThreads=8"
```

Note that you should be careful while following the procedure of adjusting the settings of garbage collections, testing under-load environments, and adjusting again.

Let’s make changes in the Liferay Properties files to improve server performance.

**Properties file changes**

Liferay allows you to set the properties values in the `portal-ext.properties` file to improve the server performance.

You can set the property that allows you to load the theme-merged CSS files for faster loading. You can even disable loading by setting the URL parameter `css_fast_load` to 0:

```
theme.css.fast.load=true
```

To load the JavaScript files into one compacted file you can set the property in `portal-ext.properties` file, which will improve the performance:

```
Javascript.fast.load=true
```

All these settings in the `portal-ext.properties` file will improve the performance by loading the theme and JavaScript faster.
Now, let's have a look at servlets filters and disable the unused ones to improve the performance.

**Disabling unused servlet filters**

Liferay, as a portal application, comes with a number of servlet filters enabled and running. Most likely for your installation, you might not need all of them since servlet filters intercept the HTTP request and do some processing on it before the Liferay Server starts building the page while running. You can improve performance by disabling the unused servlet filters by setting the properties in the portal-ext.properties file.

You can copy the servlet filter section from the original portal.properties file into portal-ext.properties and then go through the list and disable the unrequired servlet filters by setting them to false. For example, if there is no requirement for CAS for single sign-on, simply disable it by setting it to false. In the same way, you can set the properties for NTLM if you are not using single sign-on features. The following are the two properties that you can make false:

- `com.liferay.portal.servlet.filters.sso.cas.CASFilter=true`
- `com.liferay.portal.servlet.filters.sso.ntlm.NtlmFilter=true`

There are many servlet filters defined, which you need to check and disable. The fewer the servlet filters running, the less are the processing time and power needed for each request.

So, finally, you have achieved the goal of improving the Liferay Portal server performance by defining the preceding settings.

```
Note that after doing the settings, you should do the load testing of the portal. There might be a chance of a performance issue occurring in a custom-portlet application that's doing something it shouldn't do.
Make it a practice to do load testing of the application before putting it into production. It's the best way to find out potential performance issues.
```

Now, have a look at the configuration of Content Delivery Network, which may also help with improving portal performance.
Content Delivery Network (CDN) is a large distributed system of servers deployed in multiple data centers across the Internet. It serves content to end users with high availability and high performance. The static content (images, JavaScript, CSS, and so on) is stored on multiple servers, and while retrieving the content, it pulls from the nearest server (closest to the users).

CDN functions as a caching proxy, which means the static content is copied to a local server in a cache for fast and easy retrieval of content. By this process, you improve the latency time since the browsers are so much more capable of downloading static content from the local server cache. When the users request the server for content, it generally triggers an algorithm and locates the content closest to the user. It reduces waiting time for the request and load on the application server. This process also improves the portal performance.

Liferay has some restrictions on using CDN as it allows only the dynamically retrieving request content.

Note that you should make sure from the CDN provider that you don't have to upload the content directly to CDN as it should fetch the content itself.

You can configure CDN in Liferay Portal by very simple steps; there are two ways to set CDN. Let's explore them:

1. By setting properties in the portal-ext.properties file.
2. By setting through Control Panel.

In the portal-ext.properties file, you need to set the properties for CDN, which are given here:

```properties
cdn.host.http=
cdn.host.https=
cdn.dynamic.resources.enabled=true
```

The first one, cdn.host.http, allows you to set the hostname that will be used to serve static content for requests made over the HTTP protocol. The other one is cdn.host.https, which allows you to set the hostname that will be used to serve static content for requests made over the HTTPS protocol. You can disable both properties dynamically at runtime by setting the URL parameter cdn_enable to 0.

Last but not least, cdn.dynamic.resources.enabled=true enables you to serve, by dynamically generated CSS, images, and JavaScript. If set to false, it allows the usage of CDN, which does not support lazy loading of content.
Now, let's have a look at the same setting in **Control Panel**. Follow these steps to set CDN:

1. Log in as Portal Administrator.
2. Navigate to **Control Panel** and select **Portal Settings** under the **Configuration** section.
3. Now look for CDN settings in the page; refer to the following screenshot marked with the red box.
4. Set the settings, and finally save it.

![Figure 11.12: Content Delivery Network (CDN) in Control Panel](image)

By defining the preceding settings for CDN, latency time will be reduced and your overall portal performance will be improved.

**Liferay Connected Services**

Liferay Connected Services (LCS) is a set of tools and services that lets you manage and monitor your Liferay installations. LCS allows you to install fix packs for your server seamlessly over the cloud. LCS won't install anything that you don't specifically choose for installation. It provides you with one-click downloading and updating. It also monitors your Liferay server performance with the help of tools such as data on pages, portlets, memory usage, JVM performance, and many more. The best part is that LCS works regardless of whether your Liferay instance is on a single discreet server or in a cluster environment. LCS supports Liferay Portal 6.1 GA 3 or 6.2 GA 1 and higher. LCS is available for both community and enterprise editions. For Enterprise Edition, LCS provides the fix patch and other updates over the cloud.
Server Administration

LCS is cloud-based; you need to have an account to access it. First, create an account in http://liferay.com, and then set up an LCS account at https://lcs.liferay.com. While creating an LCS account, you will be asked to download the Liferay Connected Services Client application; you can refer to the following screenshot:

![Figure 11.13: The LCS screen for downloading the Liferay Connected Services Client application](image)

After you download the .war file, it will provide steps to do to get connected; the following screenshot shows this:

![Figure 11.14: The LCS instructions for installing the Liferay Connected Services Client application](image)
If your server accesses the Web through a proxy, you need to set the properties in the \texttt{portal-ext.properties} file, which resides inside the WAR file of the LCS client portlet:

1. Open the WAR file of the LCS client portlet using the WinRAR software and locate the \texttt{portal-ext.properties} file in the location \\
   \texttt{WEB-INF/classes/portlet-ext.properties}.
2. Add properties at the end of the file with the values \texttt{proxy.host.name=} and \texttt{proxy.host.port=}.
3. After you save the \texttt{portal-ext.properties} file in the WAR file, simply deploy it.

\begin{itemize}
  \item If there is no proxy used to access your server, you don’t need to add properties to the \texttt{portal-ext.properties} file.
\end{itemize}

You can deploy the LCS .war file to your Liferay instance. After installing the .war file in Liferay Portal, a new service called \textbf{Liferay Connected Service} will appear under the \textbf{Apps} section in Control Panel. Click on the \textbf{Authorize Access} button to authorize \textbf{Liferay Connected Services} to start receiving your portal metrics data from \textbf{Liferay Connected Services} under \textbf{Apps} in Control Panel. You can refer to the following screenshot:

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{image.png}
\caption{The Liferay Connected Services Client application in Control Panel}
\end{figure}
Next, log in to liferay.com using the Liferay credentials, and click on the **Grant** button to provide permission to access your Liferay account details; refer to the following screenshot:

![Grant Access to Liferay Connected Services Client application](image)

Figure 11.16: Grant Access to the Liferay Connected Services Client application to access your Liferay account

After giving the grant access permission, you need to register your server details with LCS by filling out the form.

Information required for the following terms that you need to know:

- **Project**: This generally represents a group of users below a company or organization who are working together on a common project
- **Environment**: This represents a cluster of servers or a virtual aggregation of servers
- **Server**: This represents a concrete portal instance, which can be a standalone server or a cluster node

Let's describe the fields to make it easier when filling them in:

- **Project**: Select the project from the drop-down menu
- **Environment**: Select an environment or create a new one by clicking on the **Edit New Environment** button; a pop-up window will open to fill its **Name**, **Location**, and **Description**
- **Server Name**: Provide your server name so that you can differentiate in the LCS account
• **Server Location**: Input your city, office building, or anyplace else that lets you know where the server resides

• **Server Description**: Input the server description by which you can differentiate the servers in LCS

Finally, you can click on **Register**; follow this screenshot:

![Registration Step 2 of 2](image)

Figure 11.17: The Liferay Connected Services Client application form for registration of the server
After you register the server, you need to synchronize it with LCS:

Let's have a look at LCS sites in detail.

Managing the server through the LCS site
Once you open My LCS Project in the LCS site, it lists all the available fix packs available across a cluster; refer to the following screenshot for the Dashboard view. LCS downloads and installs fix packs simultaneously across all nodes; you don't have to handle each one individually.
In the preceding screenshot, you will be able to see the **Fix Packs** and **Alerts** tables. The **Fix Packs** table generally lists the available fix packs for the running servers. The **Alerts** table generally lists many other kinds of messages, such as the server is offline, monitoring is unavailable, and so on. In the left-hand side menu panel, you will be able to manage the users and even add new environments. The following screenshot displays the **Users** details. As an administrator, you can invite other users and manage them too.

![Figure 11.20: Liferay Connected Services (LCS) Users view](image)

You can also see the subscription of environments by clicking on the **Subscription** link from the left-hand side panel, and if required, you can regenerate the token of the listed environment by clicking on the **Regenerate** link from the **Actions** button.

The LCS site allows you to add new environments by clicking on the **Add Environment** button from the left-hand side panel. After clicking on **Add Environment**, you get the form with the Name, Description, and Location fields. After filling in the details, finally click on the create button to create the new environment entry.
To view **Environment Details**, you need to click on the environment, that is, **Palm Tree QA** in our example, which you can click from the left-hand side panel. Refer to the following screenshot, which shows the details of the server in LCS:

![Figure 11.21: Liferay Connected Services (LCS) environment view](image)

If you notice, there are two servers registered, which are **Palm Tree Server QA** and **Liferay 6.2 EE**. Once you select the server instance, it will display the fix packs under the **Available** tab for that particular server. Even you can monitor your server performance and other details from here. Refer to the following screenshot, which displays the server details along with other controls features:

![Figure 11.22: Liferay Connected Services (LCS) server view](image)
You can click on the download button, which will download all the fix packs available, or you can simply select a particular fix pack from the list and click on the download icon next to it. Once the fix pack is downloaded and the server restart is done, the fix pack will be installed into your server automatically and will be listed under the **Installed** tab. Cluster environments also work in the same manner.

There are three buttons at the top, which are as follows:

- **Notifications**: This displays the available fix packs for the particular server instance.
- **Metrics**: This displays the different metrics and statistics of the server performance. This has three different categories defined; let's discuss them in detail:
  - **Application**: This has three other categories defined within it:
    - **Pages**: This lists the page load time along with the frequency with which specific pages are loaded.
    - **Portlets**: This lists the portlet load time, along with their frequency for specific portlets in your server. Refer to the following screenshot; if you notice, the dock bar frequency is 23, and the average loading time is 5208 milliseconds:

![Figure 11.23: Liferay Connected Services (LCS) application | Portlets](image)
Cache: This lists the Liferay Single VM metrics and Hibernate metrics tables; refer to the following screenshot:

![Screenshot of Liferay Connected Services (LCS) application Cache]

Figure 11.24: Liferay Connected Services (LCS) application | Cache
JVM: This displays the statistics about the JVM running on your server, including **Garbage Collector Metrics** and **Memory Metrics**; refer to the following screenshot:

![JVM Metrics](image.png)

Figure 11.25: The Liferay Connected Services (LCS) JVM metrics view

JVM metrics are very useful from a server performance point of view. They display the usage of **PS Survivor Space**, **PS Old Gen**, **PS Eden Space**, **Code Cache**, and **PS Perm Gen**.
Server Administration

- **Server**: This displays the horizontal bar graph that shows the number of **Current Threads** and **JDBC Connection Pools** that are running on your server.

![Figure 11.26: The Liferay Connected Services (LCS) Server metrics view](image)

- **Server Details**: This displays the server details and also allows you to edit and unregister your server from LCS. It has two tabs — Server Settings and Server Properties:
  - **Server Settings**: This allows you to edit the server name, description, and location. You can even unregister your server from LCS by clicking on the Unregister button.
Server Properties: This displays general information about your Liferay server and hardware. See the following screenshot for server properties:

![Figure 11.27: Liferay Connected Services (LCS) Server Properties view](image)

LCS is a very powerful tool that greatly simplifies the fix pack update process and also gives you extensive information on your running server.

Now you will learn about Liferay clustering.

## Liferay clustering

Liferay Portal is configured for a single-server environment, which comes out of the box. When your site traffic starts increasing, you need to increase your server size as per the requirement. Here comes the Liferay Portal cluster design, which allows you to route the site traffic in different servers.

Liferay Portal works perfectly in a cluster of multiple machines—a horizontal cluster or in clusters of multiple VMs on a single machine, that is, a vertical cluster or a mixture of the two.
Let's take a scenario where you have installed Liferay on different server nodes. Now to make the cluster environment, you need to define several optimizations and configurations.

- All the server nodes should be pointed to the same Liferay database or database cluster
- All nodes of the clusters should have the access to Documents and Media repositories
- For a cluster environment, you should configure a search for replication or use a separate search server
- The cache mechanism should replicate across all nodes of the cluster
- If you are using server farms, you must configure the hot deployment folders for each node

A server farms configuration is done via a script, which helps you to deploy normally to any node's deploy folder, and the farm script will sync the deployment to all nodes.

Let's discuss each of the preceding points in detail to configure a cluster environment.
A common database for multiple nodes

Each node in the cluster should be configured with a data source that points to one Liferay database (or a database cluster) that all the nodes will share. You should not use the embedded HSQL database that comes along with the Liferay bundle; instead, you should use a different database. To optimize your database, there are two options: a read-writer database configuration and sharding.

The read-writer database configuration

Liferay Portal supports two different data sources to read and write, which helps you split your database infrastructure into two different sets: one optimized for reading and another optimized for writing. By doing this, it makes the databases sync in a much faster manner than a single data source that handles everything.

Now, you need to set up the properties in portal-ext.properties files to enable a read-writer database:

```java
jdbc.read.driverClassName=com.mysql.jdbc.Driver
dbc.read.url=jdbc:mysql://databaseread.com/lportal?useUnicode=true&characterEncoding=UTF-8&useFastDateParsing=false
dbc.read.username=<user name>
dbc.read.password=<password>

dbc.write.driverClassName=com.mysql.jdbc.Driver
dbc.write.url=jdbc:mysql://databasewrite.com/lportal?useUnicode=true&characterEncoding=UTF-8&useFastDateParsing=false
dbc.write.username=<user name>
dbc.write.password=<password>
```

The preceding code is for the read-writer for the database configuration. Specify the user name and password for each database configuration.

Now you need to enable the read-writer database configuration by uncommenting the Spring property, that is, META-INF/dynamic-data-source-spring.xml, in the portal-ext.properties file:

```java
spring.configs=
META-INF/base-spring.xml,\nMETA-INF/hibernate-spring.xml,\nMETA-INF/infrastructure-spring.xml,\nMETA-INF/management-spring.xml,\nMETA-INF/util-spring.xml,\nMETA-INF/jpa-spring.xml,\nMETA-INF/executor-spring.xml,\nMETA-INF/audit-spring.xml,\n```
META-INF/cluster-spring.xml, \
META-INF/editor-spring.xml, \
META-INF/jcr-spring.xml, \
META-INF/ldap-spring.xml, \
META-INF/messaging-core-spring.xml, \
META-INF/messaging-misc-spring.xml, \
META-INF/mobile-device-spring.xml, \
META-INF/monitoring-spring.xml, \
META-INF/notifications-spring.xml, \
META-INF/poller-spring.xml, \
META-INF/rules-spring.xml, \
META-INF/scheduler-spring.xml, \
META-INF/scripting-spring.xml, \
META-INF/search-spring.xml, \
META-INF/workflow-spring.xml, \
META-INF/counter-spring.xml, \
META-INF/mail-spring.xml, \
META-INF/portal-spring.xml, \
META-INF/portlet-container-spring.xml, \
META-INF/staging-spring.xml, \
META-INF/virtual-layouts-spring.xml, \
#META-INF/dynamic-data-source-spring.xml, \
#META-INF/shard-data-source-spring.xml, \
#META-INF/memcached-spring.xml, \
classpath*:META-INF/ext-spring.xml

After setting the properties for two databases for replication and enabling the dynamic-data-source-spring.xml in portal-ext.properties, you need to restart the server.

**Database sharding**

Sharding is a type of database partitioning that separates very large databases into smaller, faster, more easily managed parts called data shards. It is also used to describe an extremely high-scalability configuration for the systems with massive numbers of users.

This helps you to split up the database by different types of data stored in it. For example, implementing database sharding helps you to split up the database with respect to the user's last name: the ones that begin with A to F go in one database, G to L go into another database, and so on. Whenever the user logs in, it identifies the user's last name and directs them to the application that is connected to the database corresponding to their last name.
In different portal instances, you can configure sharding properties using the `com.liferay.portal.dao.shard.RoundRobinShardSelector` class. In this class, the default algorithm for sharding has been implemented in Liferay, which helps Liferay to select different portal instances and eventually distributes the data across them.

Liferay provides you with an alternative by which you can use the `com.liferay.portal.dao.shard.ManualShardSelector` class. For this, you'd need to configure your shards manually in Control Panel.

You can also develop and implement your own sharding algorithm and configure it in the `portal-ext.properties` file:

```java
shard.selector=com.liferay.portal.dao.shard.RoundRobinShardSelector
#shard.selector=com.liferay.portal.dao.shard.ManualShardSelector
#shard.selector=[your implementation here]
```

After you have enabled sharding, you need to make sure that you are using the Liferay data source implementation instead of your application server. Set the database properties in `portal-ext.properties`:

```java
jdbc.default.driverClassName=com.mysql.jdbc.Driver
jdbc.default.url=jdbc:mysql://localhost/lportal?useUnicode=true&characterEncoding=UTF-8&useFastDateParsing=false
jdbc.default.username=
jdbc.default.password=
jdbc.one.driverClassName=com.mysql.jdbc.Driver
jdbc.one.url=jdbc:mysql://localhost/lportal1?useUnicode=true&characterEncoding=UTF-8&useFastDateParsing=false
jdbc.one.username=
jdbc.one.password=
jdbc.two.driverClassName=com.mysql.jdbc.Driver
jdbc.two.url=jdbc:mysql://localhost/lportal2?useUnicode=true&characterEncoding=UTF-8&useFastDateParsing=false
jdbc.two.username=
jdbc.two.password=
shard.available.names=default,one,two
```

After you set the preceding properties, you can set up the DNS for the domain names pointing to a different Liferay installation. Now, go to Control Panel, click on Portal Instances under the Configuration section, and create two or three instances bound to the DNS names that you have configured.
Note that when using the `RoundRodinShardSelector` class, Liferay automatically enters data into each instance one by one. If you're using the `ManualShardSelector` class, then you have to specify a shard for each instance from the Portal Instance add interface in the Control Panel | Configuration section.

Finally, you need to modify the `spring.configs` section of your `portal-ext.properties` file to enable the sharding configuration, that is, `META-INF/shard-data-source-spring.xml`.

After doing all the settings and configuration, your database for a large installation is complete.

**Documents and Media Library for all nodes**

Liferay Portal has a unique feature in Document and Media Library, which allows you to mount several other repositories. If you have a separate repository that you have mounted, all nodes of the cluster should point to this repository. Now you should focus on improving performance. At this point, it is good to cluster your third-party repository by going through the documentation for the repository you have used. If you don't have any third-party repository, you can configure the Liferay repository to perform perfectly in a cluster configuration.

Now, we need to configure the Liferay Document and Media Library stores files and check whether all the files have the proper and same access to each file for every other node. In the `portal-ext.properties` file, there are several configuration properties that allow you to configure the file storage with the `dl.store.impl=` property:

```
#dl.store.impl=com.liferay.portlet.documentlibrary.store.AdvancedFileSystemStore
#dl.store.impl=com.liferay.portlet.documentlibrary.store.CMISStore
#dl.store.impl=com.liferay.portlet.documentlibrary.store.DBStore
dl.store.impl=com.liferay.portlet.documentlibrary.store.FileSystemStore
#dl.store.impl=com.liferay.portlet.documentlibrary.store.JCRStore
dl.store.impl=com.liferay.portlet.documentlibrary.store.S3Store
```

The preceding properties allow the Liferay Document Library server to use this to persist documents and files. If you notice in the preceding code, except for the `FileSystemStore` entry, the other entries are commented. That means Liferay will store the documents in your local filesystem.
Understanding the filesystem store

As you have seen in the preceding code, this is a default store for Liferay. This uses your local filesystem folder to store files. The filesystem can be used for a clustered environment, but we need to use a storage area network or a clustered filesystem to handle concurrent requests and file locking.

The filesystem store is tightly bound with the Liferay database; as per the default settings, documents are stored in the document_library subfolder of the data folder in the Liferay bundle. The path of the folder can be changed by changing the property value with a new folder path location:

```
dl.store.file.system.root.dir=${liferay.home}/data/document_library
```

Let's look at the following image for the filesystem storage folder structure, which is created based on primary keys in the Liferay database:

![Liferay filesystem storage](image)

The format to create a folder path to store any documents is this:

```
 companyId/folderId/numericFileEntryName/versionNumber
```

The first folder name is the company ID to which the site belongs and the second folder name is the ID of the Document and Media folder within which the document resides. The third folder name is the numeric file entry name of the document itself, and finally, the fourth folder is the version number, which is used to store multiple versions of the document.
Filesystem storage is bound with Liferay so closely and tightly that document and media files are stored according to their folder structure.

**Understanding the Liferay Advanced filesystem store**

The Liferay Advanced filesystem store is similar to the default filesystem store. It also stores the files in the local filesystem. The main difference is that many operating systems do not allow creating a number of files that can be stored in a particular folder. To overcome this, the advanced filesystem programmatically creates a structure that can be expanded to millions of files by alphabetically nesting the files in folders.

To make the cluster environment, you need to point the store to a network-mounted filesystem, which supports concurrent request and file locking; it should allow access to all the nodes.

**Understanding the CMIS store**

Liferay Portal has a feature that allows you to mount different repositories using Content Management Interoperability Services (CMIS) within the Document and Media Library.

You can mount the Liferay repository connected to a clustered CMIS repository by configuring the properties files. In portal-ext. properties, you can set the following properties for the CMIS repository:

```
<configuration property="dl.store.cmis.credentials.username" value="<userName>"/>
<configuration property="dl.store.cmis.credentials.password" value="<password>"/>
<configuration property="dl.store.cmis.repository.url" value="http://localhost:8080/alfresco/service/api/cmis"/>
<configuration property="dl.store.cmis.system.root.dir" value="Liferay Home"/>
```

After configuring the preceding properties and restarting, the server is done. Liferay repositories are connected to CMIS via the CMIS store. The CMIS protocol prevents multiple file access from causing data corruption.

**Understanding JCR Store**

The Java Content Repository (JCR) standard is implemented in Liferay Portal to store data. Liferay comes with jackrabbit, a project from Apache as it's a JSR-170 compliant document repository. Jackrabbit is used to store the documents on the local filesystem by default. If you notice the preceding screenshot, jackrabbit is a subfolder under the data folder, which has a configuration file called `repository.xml`. 
It's this repository.xml that you can configure to store files in a database that can be accessed by all the nodes, and which operates as a cluster within a Liferay cluster. Even you can move the default repository location to a shared folder; then, there is no need to edit jackrabbit's repository.xml file. Instead, you can change the following property value in the portal-ext.properties file, which points to a shared folder location that all the nodes can access:

```
jcr.jackrabbit.repository.root=${liferay.home}/data/jackrabbit
```

In the shared location, a new configuration file will be generated, which you can modify to do jackrabbit's configuration.

Note that best practice is to configure jackrabbit in a cluster. You should redirect jackrabbit into your database of choice. This will have the capability of handling concurrency and file locking.

Now you need to uncomment the section to move the jackrabbit configuration to a new repository.xml file in a database. It is done to make it simpler for the administrator to comment out the sections related to the filesystem and uncomment the section related to the database. You can configure any database as per your requirement; by default, the MySQL database is configured.

For more information about configuring jackrabbit, see the documentation at http://jackrabbit.apache.org.

**Understanding Amazon Simple Storage Service**

Amazon Simple Storage Service (S3) is a cloud-based storage solution, which you can use with Liferay Portal. You can store your documents from all the nodes in one location seamlessly. You should have an amazon s3 account to configure it. In the portal-ext properties file, you need to configure the following properties:

```
dl.store.s3.access.key=
dl.store.s3.secret.key=
dl.store.s3.bucket.name=
```

After you configure the preceding properties, set your store implementation to S3Store:

```
dl.store.impl=com.liferay.portlet.documentlibrary.store.S3Store
```

Refer to the Amazon simple storage documentation for additional details on using Amazon's service.
Liferay 7 updates

Liferay Portal is growing with time and adopting new technologies emerging in the field of user experience. Currently, Liferay Portal is ranked at the second position in the Gartner Magic Quadrant for Horizontal Portals. It's the only open source portal on the market. As the open source portal demand increases, Liferay Portal also keeps itself updated with new technologies. Liferay Portal 7 is coming with new technologies for better end user experience for universal devices. Liferay 7 has a lot of new features to make it the best portal on the market.

Now, developing an advanced website using Liferay will be very easy for the developer.

Let's have a look at the new features in Liferay 7:

• User engagement (interaction platform) by User Personas
• Single-page Application to improve performance
• Audience Targeting by user segments, suggested content, and analytics
• Power user productivity center
• Integrated forms and workflow
• Building modern websites is easier
• Improved developer experience by making it true modular architecture.
• Liferay Mobile SDK to create collaboration and productivity on the go
• Liferay Connected Services for monitoring servers

User Personas

Personas help to focus decisions surrounding site components by adding a layer of real-world consideration to the conversation:

• This helps in representing a major user group for your site
• This expresses and focuses on the major needs and expectations of the most important user group
• This gives a clear picture of the user's expectations and how they are likely to use the site
• This aids in uncovering universal features and functionality
• This describes real people with backgrounds, goals, and values
The purpose of personas is to create reliable and realistic representations of your key audience segments for reference.

**Single-page Applications**

A Single-page Application (SPA) is a web application or website that fits on a single web page with the goal of providing a more fluid user experience akin to a desktop application. It helps in improving the page loading time as compared to the older version. As the user clicks on links and interacts with the page, subsequent content is loaded dynamically. The application will often update the URL in the address bar to emulate traditional page navigation, but another full page request is never made.

**The Audience Targeting application**

Audience Targeting is a new feature in both Liferay 6.2 and Liferay 7. It raises the engagement experience of your portal to a whole new level. Liferay provides the Audience Targeting application in Marketplace. This app allows you to segment your audience, target specific content to different user segments, and create campaigns to target content to user segments. It also allows you to track user actions and generate reports that provide insight into the effectiveness of your campaigns. We discussed this in the preceding chapter in detail.
The developer experience
Liferay has come up with broader perspectives for different users, such as the end user experience, power user experience, and developer experience. Liferay tried to make the developer experience better by making Liferay 7 True Modular Architecture with the following advantages:

- Improved maintenance
- Better release process
- Lightweight
- More flexibility
- Micro-service oriented
- Makes everything independent and extensible

Advanced Liferay Mobile SDK
The Liferay Mobile SDK plugin for Eclipse simplifies developing Android apps that use Liferay. You can configure Mobile SDKs manually to use with Android apps and/or iOS apps. Once configured, you can invoke Liferay services from your app. The Liferay Mobile SDK bridges the gap between your native app and Liferay's services.

Liferay Connected Services
Liferay Connected Services was released for Liferay 6.2 too, which we discussed in previous sections.

Summary
Server Administration is essential for maintaining the server and keeps it healthy for end users to use. In this chapter, you saw how to handle the server administrator in the control panel by reindexing the database and searches. You also saw how to enable the CAPTCHA and make data migration databases easier. This chapter also taught you how to improve the server performance by setting the properties for JDK and Liferay. Content Delivery Network increases the performance of the server by keeping the static content in the local cache for fast access. LCS is a new feature that helps you to monitor the server and trigger the fixes from the cloud. It saves time and improves the server performance too. You also came to know about the new features of Liferay 7, which is going to be a major release from Liferay.
Symbol

$PORTAL_ROOT_HOME folders
  dtd 59
  errors 59
  html 59
  layouttpl 59
  wap 59
  WEB-INF 59

A

Access Control List (ACL) 235
Activities portlets 19
Advanced filesystem store 566
advanced site settings 377-381
Alfresco
  Liferay, integrating with 444-448
  URL 444
Amazon Simple Storage Service (S3) 567
announcements and alerts, RSS
  about 287
  Announcements portlet, configuring 291
  Announcements portlet, features 290
  entries, managing 287-289
Application Display Templates (ADT)
  about 306, 381
  creating 382-384
App Manager 506
architecture, Liferay Portal
  Frontend layer 10
  Persistence layer 10
  Service layer 10
  Web services API layer 10

Asset Publisher
  about 200
  Asset Renderer Framework 208
  assets, selecting dynamically 206, 207
  assets, selecting manually 202-204
  configuration 201
  customization 207, 208
  features 200
  velocity templates, adding 208
assets
  tagging 191, 192
Audience Targeting app
  about 514, 569
  faceted search 522, 523
  installing 515
  Search portlet, configuring 523
  uninstalling 515
  user segment management 516-520
authentication
  about 81, 129
  auto login 131
  configuration 129, 130
  general settings 139
  LDAP authentication 131-133
  OpenID authentication 137
  Open SSO authentication 137, 138
  SSO authentication 135, 136
authorization
  about 81, 143
  permission 143, 144
  permission algorithms, setting 147, 148
  permission, defining on role 144-146
B

**Blog entries**
- editing 294, 295
- inappropriate content, flagging 297
- permissions 302-304
- rating 296, 297
- removing 295
- RSS feeds 297
- searching 295, 296
- social bookmarks 297, 298

**Blogs**
- Blogs Aggregator portlet 314, 315
- comments, adding 298-300
- entries, adding 292, 294
- entries, managing 294
- exploring 291
- friendly URLs 311
- in communication 311, 312
- in scope 310
- permissions, assigning 300
- portlet, exploring 305
- publishing 312
- Recent Bloggers portlet 312-314
- using 305

**Blogs portlet**
- Asset Renderer Framework 308
- configuring 306, 307
- exploring 305
- indexing 308
- properties, setting 308
- social activity 308
- tags and categories 309

C

**Calendar portlet** 18
**CAPTCHA**
- about 134, 135
- URL 134

**Categories, Message Boards**
- adding 153-155
- editing 155, 156
- hierarchy 190
- managing 153

removing 156
- RSS feeds, viewing 156
- subscribing, to threads 166
- unsubscribing, from threads 167

**Central Authentication Service (CAS)** 79, 136

**Central European Time (CET)** 57

**Child organizations**
- adding 86, 87

**Child pages**
- adding 45
- display order, changing 48
- page template, types 46-48
- private pages 45
- public pages 45

**CKEditor**
- configuring 278, 279
- content features 275
- end user features 274, 275
- images, inserting from 276-278
- upgrading 273
- usability features 276
- user interface features 275
- URL 273

**Cluster environment**
- about 559
- configurations 560
- database for multiple nodes, configuring 561
- Documents and Media Library 564

**Comments**
- adding 298-300
- settings 300

**Concurrent-Mark-Sweep (CMS) collector** 543

**Content Delivery Network (CDN)**
- about 546
- setting up 547

**Content Management Interoperability Services (CMIS)**
- about 444, 566
- URL 444

**Content management systems (CMS)** 3

**Content post**
- categorization 191
Control Panel
configuration and settings  77
configuring  72, 73
in Liferay 6.2  73
My Account  74, 75
My Dashboard  76
My Profile  76
Coordinated Universal Time (UTC)  57

Corporate extranets
about  15
collaborative websites  15
content management  15
infrastructure portals  16
web publishing  15

Creole
about  220
URL  220

Custom Fields
about  539
new custom field, adding  539, 540

D

database
configuring, for multiple nodes  561
read-writer database configuration  561, 562
sharding  562, 563
Device Recognition  389
Directory Information Tree (DIT)  132
distinguished names (DNs)  132

Document and Media Library
about  564
Advanced filesystem store  566
Amazon Simple Storage Service (S3)  567
Content Management Interoperability Services (CMIS) store  566
filesystem store  565, 566
Java Content Repository (JCR) store  566
documents
converting, with OpenOffice  246
Documents and Media portlet
about  396
checkin feature  407-409
checkout feature  407-409
configuration  414-419
Contract document type  398
documents and media, managing  397
documents, exporting  419-421
documents, importing  419-421
document type, creating  424-426
filesystem store  565, 566
files, adding  403-405
files, editing  406
folders, adding  399, 400
folders, editing  401
folders, moving  402
General Permissions, assigning  411
managing  397, 398
metadata sets  424-426
permissions, assigning  410
Resource Permissions, assigning  411-414
settings  421, 422
shortcut, adding  409, 410
workflow, enabling  428-430
Dynamic Data List
about  248
creating  249-251
data, editing  253
data, viewing  252
displaying  253-255
permissions, assigning  255
record, adding  252

E

enterprise  80, 81
Enterprise Service Bus (ESB)  10, 11, 505
extended properties files, adding
GlassFish  59
JBoss  58
Tomcat  58
Extensible Stylesheet language  465
External Services tab
ImageMagick, installing  534, 535
OpenOffice, installing  535, 536
Xuggler, configuring  536

F

Facebook
about  71
URL  329
used, for signing in Liferay  329, 330
filesystem store  565, 566
folksonomies 192
FreeMarker template language 465
Friends 71

G

garbage collection (GC)
  about 541-544
  reference link 542
Google Gadget
  about 71
  URL 72
Group Statistics portlets 19

H

hypersonic database 24

I

ImageMagick
  installing 534, 535
  URL 534
installation options, Liferay Portal
  installation procedure 33
  open source bundle, using 33
intranet portal, features
  collaborative documents, with wikis 2
  document management 3
  everything in one place 6
  hosted discussions 1, 2
  internalization 4
  Liferay Sync 5
  Marketplace 5
  other features 6
  personalization 4
  publishing 4
  scheduling 4
  shared calendars 3
  social networks 5
  Social Office 5
  staging 4
  team and individual blogs 2
  web content management (WCM) 3
  workflow 4
intranet site structure
  default admin 63
  extended properties files, adding 58, 59
friendly URL 64
  guest layouts 63
  mail configuration 64
  navigating 55, 56
  portal, configuring 56, 57
  portal context 60
  portal paths, configuring 57, 58
  portal structure 59, 60
  session settings 61, 62
  terms of use page, settings 61

J

jackrabbit
  about 566
  URL 567
Java Content Repository (JCR) store 566
JavaScript Object Notation (JSON)
  about 270
  Polls, using 270
JDK
  URL 23
JProfile 527
JSR-168
  URL 29
JSR-286
  URL 29
JSR-362
  URL 29

L

LDAP authentication
  about 131-133
  authentication chains 134
  CAPTCHA 134, 135
  LDAP, using 133
LibreOffice. See OpenOffice
Liferay
  about 1
  advantages, for building intranet 12-14
  for corporate extranets 15
  integrating, with Alfresco 444-448
  integrating, with social networking 329
  other advantages 14
  out-of-the-box (OOTB) portlets 16
  references 19
Liferay 6.1 33
Liferay 6.2
  Control Panel 73, 74
Liferay 7
  Audience Targeting application 569
  developer experience 570
  features 568
  Liferay connecting services 570
  Liferay Mobile SDK plugin 570
  Single-page Application (SPA) 569
  User Personas 568
Liferay books category 157
Liferay Connected Services (LCS)
  about 547, 548
  account, creating 548-552
  server, managing through 552-559
  URL 548
Liferay Portal
  about 22
  architecture 9, 10
  available-releases, URL 38
  bundled with GlassFish 3.1.x, using in Windows 34, 35
  bundled with Tomcat 6.x, using in Linux 35
  deployment matrix 38
  domains, setting up 37
  framework 9, 10
  hierarchy 32
  installing, on existing application server 33
  pages, obtaining 23-27
  portal installation, options 37
  portlet container, using 29
  portlet, lifecycle 29-31
  portlets 28, 29
  production servers, setting up 36
  scope 32
  setting up 33
  terminologies 32
  URL, shortening 37
  used, for building intranet portal 1
  working 27
Liferay Social Activity
  about 385, 386
  purpose 387
Liferay Social Office 5
Liferay Sync
  about 5, 18, 430
  files, in local folder 440, 441
  older version 431, 432
  setting up 430
  URL 431
Liferay Sync 3.0 BETA
  about 433
  configuring 433-439
Liferay Sync Client
  for mobile devices 441-443
Liferay wikis
  Creole mode 236, 237
  HTML mode 237
  MediaWiki mode 237
  using 235, 236
links
  text, linking to documents 281
Local Live staging
  about 482
  enabling 483-486
  pros and cons 482
location 83
location-based organizations
  about 93
  location, adding for enterprise 93, 94
  location, adding for suborganizations 95
  locations, deleting 99
  locations, editing 98
  locations, searching 97
  locations, using 100
  locations, viewing 96
  site, creating with private pages 95, 96
  site, creating with public pages 95, 96
  users, assigning to location 99
M
mail configuration, intranet site
  about 64
  hook, using 67
  Java-mail 66
  mail session 65
Marketplace
  about 497-499
  App Manager 506
  apps, creating 504
  apps, uploading 504
exploring 500-502
exploring, through Liferay instance 502-504
URL 499

Marketplace, for apps creation
hook plugins, creating 505
layouts templates, creating 505
OSGi bundles, creating 506
portlets, creating 505
themes, creating 505
URL 505
web plugins, creating 505

Media Gallery portlet 426-428

MediaWiki
about 215, 237
URL 215

memory
performance tuning 541

Message Boards
about 18, 152
archiving 175-177
categories, managing 153
characteristics 173, 174
configuring 177, 178
customizing 168
exporting 175-177
friendly URL, viewing 175
importing 175-177
ontology 191
permissions, assigning 179
posts, managing 161
semantics 191
setting up 168-172
threads, managing 156
users, banning 172
users, unbanning 172
using 173, 189

minor garbage collection 543

Mobile Device Families
about 389
setting 389-392

N

Netvibes 71
nodes, Wikis
adding 213, 214

Netscape
configuring 247
installing 535, 536
integrating 246
properties, setting 248
URL 246
used, for converting documents 246-248

Open Services Gateway initiative (OSGi) 506

Open SSO
authentication 137, 138
URL 137

organization
about 83-86
assignment, overriding 102
child organizations, adding 86, 87
deleting 91, 92
denial 90, 91
hierarchy 103
location-based organizations 93
managing 86
membership, overriding 102
organization types, configuring 101
searching 89
settings 100
Shared Global 103
site, creating with private pages 88
site, creating with public pages 88
tree 103
users, adding 92
users, banning 92
vs. sites 84
viewing 89
organization forms 101, 102
out-of-the-box (OOTB) portlets
about 16
collaboration 17, 18
content management 16
features 16
news 19
social 19
tools 19

P

page
comments, adding 68, 69
content, flagging 70, 71
rating 69, 70
using 68

pages, sites
creating 342
logo, updating 350
managing 342
merging 351
search engine optimization (SEO) 351, 352
updating 349
viewing 342-348

pages, Wikis
adding 217-220
comments, adding 224, 225
managing 217
nodes, subscribing 227
ratings, adding 226
searching 223, 224
viewing 221-223

page template
applying 355
creating 353
permissions, assigning 353, 354

Palm Tree Publications
about 7
groups 8
intranet, building 7

Palm Tree Publication site
building 38, 39
layout templates, modifying 43-45
pages, adding 40
pages, building 40
pages, removing 41, 42
portlets, adding 42, 43
portlets, removing 43
performance tuning
about 540
garbage collection 542-544
of memory 541
unused servlet filters, disabling 545

permissions, Blogs portlet
application permissions 304, 305
assigning 301
assigning, to blog entries 301, 302

permissions, Dynamic Data List
assigning 255
assigning, for Application Permissions 257
assigning, for General Permissions 256
assigning, for Record Set 256

permissions, Message Boards
about 82, 143, 144
assigning 179
assigning, for Application Permissions 188, 189
assigning, for Message Boards category 182-184
assigning, for Message Boards messages 185
assigning, for Message Boards Thread 186
assigning, for Message Boards to General Permissions 186, 187
assigning, for Messages 180, 181
defining, on role 144-146

permissions, Polls
assigning, for Application Permission 267
assigning, for General Permissions 267
assigning, for Poll Questions 264
assigning, for Polls Question 265, 266

permissions, Wikis
assigning 227, 228
entitlements, setting for Application Permissions 232, 233
entitlements, setting for Wiki General Permissions 229, 230
entitlements, setting for Wiki Node 230, 231
entitlements, setting for Wiki Nodes 228, 229
entitlements, setting for Wiki Page 231, 232
entitlements, setting for Wiki portlet 233
personal page
   managing, with social networking portlet 322-324
template, creating 324-328
personal site 507
Polls
   about 258
   features 261
in scope 269
permissions, assigning 264
Polls Display portlet 262
Polls portlet 258, 259
properties, setting 261
question, deleting 260
question, editing 260
using 267, 268
using, through JSON services 270
versus surveys 268
votes, viewing 260
Polls Display portlet
   about 262
   features 263
   properties, setting 263
portal-ext.properties file
   modifying 544
Portal-Group-Page-Content 32
Portal Instances 538
portal navigation
   configuration 148, 149
portal pages
   child page, adding 45, 46
copying 49
deleting 49
friendly URL, providing 48
multiple languages 50
portlets, copying 49
portlets, sharing 71, 72
settings, managing 51-53
setting up 45
theme, customizing 50, 51
portlets
   customizing 53, 54
lifecycle 29, 30
sharing, within portal page 71, 72
posts, Message Boards
   adding 161
banned users, viewing 165
deleting 163
editing 162
managing 161
own posts, viewing 164
recent posts, viewing 164
searching 164
statistics, viewing 164
users, banning 164
viewing 163
R
read-writer database configuration 561, 562
Really Simple Syndication (RSS)
   about 19, 283
   adding 284
   announcements and alerts 287
   configuring 286
   portlet 284, 285
   URLs 283
Remote Live staging
   about 482
   enabling 487-489
   pros and cons 483
Requests portlets 19
Resource 82
role-based access control (RBAC)
   about 80, 81
defining, on role 147
roles
   about 82, 140, 141
   adding 142
deleting 142
   editing 142
   members, assigning 143
S
search engine optimization (SEO) 351, 352
Search portlet 19
semantics 191
Server Administration
   about 528
   CAPTCHA tab 532
   Data Migration tab 532, 533
   External Services tab 534
   File Uploads tab 534
   Log levels tab 530
Mail tab 534
Properties tab 531, 532
Resources tab 528, 529
Script tab 536, 537
Shutdown tab 537
Service Builder 10
service-oriented architecture (SOA)
about 10
Enterprise Service Bus (ESB) 10, 11
sharding 562, 563
Shared Global 103
Single-page Application (SPA) 569
Single Sign-On (SSO) 79, 112, 133
SiteMinder 79
sites
about 84, 122, 334
adding 335-339
creating 124
deleting 342
ing 341
managing 339
pages, creating 342
pages, managing 342
page template 352
permissions, assigning 374
permissions, assigning as General Permissions 374
permissions, assigning as Resource Permissions 375, 376
searching 341
Site Memberships 125, 126
Site Templates, using 127, 128, 352
team, creating 126
users, adding 360
versus organization 84
viewing 339, 340
site scope 212
site template
applying 360
creating 355
managing 356, 357
permissions, assigning 358-360
Social Activity portlet 18
social networking
exploring 316
introducing, with Liferay 329
portlet, installing 317-320
signing on, with Facebook 329, 330
template, creating for 324-328
used, for managing personal page 322-324
Social Office
about 506, 507
features 506
My Dashboard 510-512
My Profile 508, 509
Social Office Configurations 512-514
SourceForge
URL 19
SSO authentication
about 135, 136
views 172
staging, page publication
about 482
configuring 482
Local Live 482
Remote Live 482
structures, Web Content
about 461
benefits 461
creating 461-464
survey 268
T
tags
about 191
administration 193
assets, tagging 191, 192
Categories portlet 195-197
configuring 198
folksonomies 192
publishing 198, 199
Tags portlet 194
taxonomies 193
templates, Web Content
about 465
creating 465-467
threads, Message Boards
adding 157-159
ing 160
managing 156
removing 160
RSS feeds, viewing 161
U

unused servlet filters
disabling 545

user groups
about 84, 104
adding 104, 105
deleting 107
editing 106
managing 106
searching 106
site, creating with private pages 105, 106
site, creating with public pages 105, 106
users, assigning 107
viewing 106

User Personas 568

users
about 83, 108
account, creating 112
Actions tab, using 119
activating 118
adding 108-110
adding, in bulk 112
adding, to sites 360
assigning, to site 360-362
assigning, to team 368, 369
deactivating 117
deleting 118
editing 115-117
groups, assigning 363
impersonating 119
joining 369
leaving 370
managing 113
membership, requesting 370-373
more users, adding 110, 111
new password, creating 113
organization, assigning 362
searching 115
settings 119
site, creating with private pages 111
site, creating with public pages 111
site roles, assigning 365, 366
teams, creating 367

user forms, configuring 120
user groups, assigning 365, 366
user-related properties, overriding 120, 121
viewing 114, 115

User Statistics portlets 19

V

Velocity macro
about 465
URL 465

W

Web Content
about 450
configurations 472, 473
creating 452-455
editing 456, 457
exporting 475-477
folders, adding 459
importing 475-477
localization 458, 459
managing 451
moving 460
page publication, staging 482
permissions, assigning 468
scheduling 481
settings 474, 475
structures 461-464
templates 461, 465-467
viewing 455, 456
workflow 489-496

Web Content Display portlet 478, 479

Web Content Management (WCM) 449

Web Content, permissions
assigning 468
for Web Content article 471
for Web Content feed 471
for Web Content folder 470
for Web Content structure 471
for Web Content template 472
General Permissions, assigning 469
Resource Permissions, assigning 469, 470

Web Content Search portlet 479, 480
What You See Is What You Get (WYSIWYG) editors
about 2, 271-273
CKEditor, upgrading 273
dead user features 274
images, inserting from CKEditor 276-278
links, inserting to content 280
resource types, configuring 282
text, linking to pages 281

Wiki engine
URL 235

wiki pages
permissions, assigning 244, 245
publishing 242, 243
Wiki Display portlet,
properties setting 245, 246
Wiki Display portlet, using 243

Wikipedia
URL 235

Wikis
about 212
characteristics 234
configuration 237, 238
enhancement 241

Windows
Liferay Portal bundled with
GlassFish 3.1.x, using 34

Workflow Configuration
setting 387, 389

X

Xuggler
about 534
configuring 536
URL 534
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