DSPACE ADMINISTRATION
AND CUSTOMIZATION

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Understanding Dspace System Architecture
What to Administer..
Let’s understand DSpace Instance

- Communities/Collections/Items
- E-People/Groups
- Metadata Registry
- Bit stream Format Registry
- Work Flow
- Authorization.
Community/Collection/Items

- Bitstreams (files having content)
- Bundles (more than one bitstream)
- Items (digital documents)
- Collections (a set of items)
- Sub-communities (a set of collections)
- Communities (Top level)
Peoples and Dspace

- Anonymous Users (anybody)
- **Members**, who wish to subscribe to a collection (one can not subscribe to communities). Also called E-person in DSpace
- **Submitters (authors)**, who submit their publications to a collection (they should be members and have been authorized to submit).
- **Reviewers** - members who are authorized to review submissions. They can either accept or reject submissions. Normally, they are subject specialists
- **Metadata Editors** – who validate the metadata. Normally, they are library professionals
- **Collection Administrators**. In a large digital repository collection administration can be delegated various E-groups.
- They can choose the reviewers, metadata editors among members and decide the collection policy
- They are different from DSpace administrators, who have the overall responsibility and power. A kind of super-user
Grouping of Peoples

- DSpace calls the reviewers, metadata editors, collection administrators as E-groups.
- It means, there can be more than one e-person (member) in any list of reviewers or metadata editors etc.
- Each e-group can be associated with one or more collections.
- A member can be placed in none or more than one e-group.
More on Grouping/Customization

- Create communities
- Create collections under each community
- Administration of E-People
- Creating E-Groups among E-People
- Authorizing E-Groups for each collection
- Authorizing E-People for submission
- Authorizing E-Groups to workflows for each collection

- Various Authorizations at
  - Community Level
  - Collection Level
  - Item Level
  - Bitstream level
Ways to Customize

- User Interface
- Metadata
- Browse and Search
- Language
Three Layers of DSpace

• Application Layer (UI) : JSPs (XHTML/CSS) & Servlets
• Business Logic Layer : Java Classes / Objects
• Storage Layer : Database & Filesystem APIs
• **JSPs (Java Server Pages)** create HTML for the browsers to display

• **JSP Tags**, which help to "build" the webpage, and usually contain code useful to many different JSPs.

• **Java Servlets**, which perform any requests a User makes through the UI, and provide JSPs with all the information they need to create the next webpage.

• **Java Classes**, which define and retrieve information about the "objects" within the system.
DSpace Directories

Source Directories ([/something/dspace-1.8.X-source/])

All customization generally takes place here

- config/ - DSpace configurations
- jsp/ - DSpace JSPs
- src/ - DSpace Servlets & Classes

Installed Directories ([/dspace/])

- Home to all "live" configuration files, properties, Java libraries (including dspace.jar)
- Usually home to log files, reports, search indices, and "bitstreams" themselves!

Webapplication Directory ([/dspace/webapps/])

- Home to all compiled servlets and JSPs
- Basic customizations can also takes place here (if you decide to do after installation)
Things you should know about editing dspace.cfg files

- There are two dspace.cfg files after an installation of DSpace.*
- The "source" file that is found in [dspace-source]/dspace/config/dspace.cfg
- The "runtime" file that is found in [dspace]/config/dspace.cfg
  The runtime file is supposed to be the copy of the source file, which is considered the master version. However, the DSpace server and command programs only look at the runtime configuration file, so when you are revising your configuration values, it is tempting to only edit the runtime file. **DO NOT** do this.
- Always make the same changes to the source version of dspace.cfg in addition to the runtime file. The two files should always be identical, since the source dspace.cfg will be the basis of your next upgrade.
- To keep the two files in synchronization, you can edit your files in [dspace-source]/dspace/config/ and then you would run the following commands:
  - cd [dspace-source]/dspace/target/dspace-<version>-build.dir ant update_configs
  - This will copy the source dspace.cfg (along with other configuration files) into the runtime ([dspace]/config) directory
JSP Files

- The JSPs are available in one of two places:
  - `[dspace-source]/dspace/target/dspace-[version].dir/webapps/dspace-jspui-webapp/` - The location where they are copied after first building DSpace.
DSpace is Live

Welcome to our digital repository of My University research!

More exciting news to appear here.

Search

Enter some text in the box below to search DSpace.

Go

Communities in DSpace

Choose a community to browse its collections.

Digital Library at Documentation Research and Training Centre
Library and Information Science

This is a default installation of DSpace!

It can be extensively configured by installing modified JSPs, and altering the site configuration.
Basic Customization: Top News

Step 1

- Communities/Collections
- E-people
- Groups
- Items
- Metadata Registry
- Bitstream Format Registry
- Workflow
- Authorization
  - Edit News
- Edit Default License
- Supervisors
- Statistics

Step 2

- Top News [Edit]
- Sidebar News [Edit]

Step 3

News:

<h3>DSpace is Live</h3>
<p>Welcome to our digital repository of My University research!</p>
<p>More exciting news to appear here.</p>

• To change the Sidebar News, follow the same steps as shown in the above for Top News, only instead of Top News, choose Sidebar News (of Step 2)
Customization: Header/ Footer/ Navbar

Files Located in:

/dspace/webapps/jspui/layout/*.jsp

Change the HTML in header-default.jsp, footer-default.jsp, location-bar.jsp, navbar.jsp, ....

N.B. If you don’t want something to be appeared in the site, just comment it using

<%-- and --%>

Example:

<%-- <form method="get" action="<%= request.getContextPath() %>/simple-search" --%>

}
Customization: Location Bar

Files Located in:

- /dspace/config/dspace.cfg

Change name of the site in

dspace.name = “DSpace Short-Term Course”
Customization: CSS

CSS file Located in:

/dspace/webapps/jspui/styles.css.jsp

BODY { font-family: "verdana", Arial, Helvetica, sans-serif;
    font-size: 10pt;
    font-style: normal;
    color: #000000;
    background: #bbbbbb;
    margin: 0;
    padding: 0;
    margin-left:0px;
    margin-right:0px;
    margin-top:0px;
    margin-bottom:0px }
Customization: XHTML

- In JSP pages, Java code is surrounded by `<%java code%>` or `<%=java variable%>`. Any other thing outside of that is XHTML (except for JSP Tags).

```html
<td>
    <a href="<%= request.getContextPath() %>/"><a href="http://your.dspace.website.com"><img src="<%= request.getContextPath() %>/image/logo.jpg" alt="<fmt:message key="jsp.layout.header-default.alt"/>" width="102" height="100" border="0"></a></a>
</td>

<td class="tagLine" width="99%"> <%- Make as wide as possible. cellpadding repeated for broken NS 4.x --%>
    <h1 align="center">Dspace at INFLIBNET</h1>
</td>
```
Customization: Text

• “Messages.properties” contains almost all the text of DSpace
• Located in:

Format of “Messages.properties”
jsp.layout.navbar-default.authors = Authors
(Navigation bar text “Authors” shared by pages in /jsp/layout/navbar-default.jsp)
Customization: Text

- **Keys** in Messages.properties referenced in JSP with:
  
  `<fmt:message key="jsp.layout.navbar-default.authors"/>
  (/jsp/layout/navbar-default.jsp)`

- The text corresponds to a property "key" named after the JSP or Tag in which it appears.

- **Example:**
  
  `jsp.community-home.heading1` is a heading within /jsp/community-home.jsp
  
  `jsp.general.search.button` is the text that appears on ALL search buttons in DSpace
Customization: Text

Before

After
# Customization: Add Metadata

## Metadata Field Registry

Note: Adding a new field to the registry does not add a corresponding input field to the submit forms!

### ID / Element / Qualifier / Scope Note

<table>
<thead>
<tr>
<th>ID</th>
<th>Element</th>
<th>Qualifier</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>67</td>
<td>Audience</td>
<td></td>
<td>Target user</td>
</tr>
<tr>
<td>2</td>
<td>contributor</td>
<td>advisor</td>
<td>Use primarily for thesis advisor.</td>
</tr>
<tr>
<td>66</td>
<td>type</td>
<td></td>
<td>Nature or genre of content.</td>
</tr>
</tbody>
</table>

### Add Metadata Field

To create a new field you must provide a unique element and qualifier pair. The qualifier may be left blank if desired and the element and qualifier cannot contain spaces, underscores or periods.

- **Element:**
- **Qualifier:**
- **Scope Note:**

[Add New]
Customization: Submit/ Input Form

Submit: Describe this Item

Please fill in the requested information about this submission below. In most browsers, you can use the tab key to move the cursor to the next input box or button, to save you having to use the mouse each time. (More Help...)

Enter the names of the authors of this item below.

Last name  e.g. Smith
First name(s) + "Jr"  e.g. Donald Jr

Authors

Enter the main title of the item.

Title

Enter the series and number assigned to this item by your community.

Series/Report No.

Enter the series name or report paper number.

Series Name  Report or Paper No.

Add More

If the item has any identification numbers or codes associated with it, please enter the types and the actual numbers or codes below.

Identifiers

If the item has any identification numbers or codes associated with it, please enter the types and the actual numbers or codes below.

Identifiers

Select the type(s) of content of the item. To select more than one value in the list, you may have to hold down the "CTRL" or "Shift" key.

Type

Select the language of the main content of the item. If the language does not appear in the list below, please select 'Other'. If the content does not really have a language

Language

Customization: Submit/ Input Form

Submission form is located in:

/dspace/config/input-forms.xml

Submit: Describe this Item

Please fill in the requested information about this submission below. In most browsers, you can use the tab key to move the cursor to the input box or button, to save you having to use the mouse each time. (More Help...)

Enter the main title of the item.

Title

Enter appropriate subject keywords or phrases below.

Subject Keywords

Enter Govt. Doc. No.
Customization: Submit/ Input Form

General format of `input-forms.xml`

```
<page number="1">
  <field>
    <dc-element>govtdocrefno</dc-element>
    <dc-qualifier></dc-qualifier>
    <repeatable></repeatable>
    <label>Govt. Doc</label>
    <input-type>onebox</input-type>
    <hint>Enter Govt. Doc. No.</hint>
    <required></required>
  </field>
</page>
```

.................
Customization: Search

Customize Advanced Search options: /dspace17/config/dspace.cfg
Customization: Search

• Edit the search index in: /dspace/config/dspace.cfg

• This can change only your search result, not search display

search.index.11 = identifier:dc.identifier.*
search.index.12 = language:dc.language.iso
search.index.13 = keyword:dc.govtdocrefno.*

The general format is:

search.index.[number] = [search field]:element.qualifier

After making changes, re-index everything (go to /dspace/bin and execute the command, ./index-all)
Customization: Search

• To change the search display, edit advanced.jsp, dspace.cfg and Messages.properties

advanced.jsp located in:
/dspace/webapps/jspui/search/

Messages.properties located in:
/dspace/webapps/jspui/WEB-INF/classes/
Customization: Search

In advanced.jsp

```xml
<option value="govtdocrefno" <%= field1.equals("govtdocrefno") ? "selected="\"selected\"" : "" %>>
<fmt:message key="jsp.search.advanced.type.govtdocrefno"/>
</option>
```

In dspace.cfg

```xml
search.index.13 = govtdocrefno:dc.govtdocrefno.*
```

In Messages.properties

```xml
jsp.search.advanced.type.govtdocrefno = Govt Doc. No.
```
Customization: Search

Search type:
- Keyword
- Keyword
- Author
- Title
- Subject
- Abstract
- Series
- Sponsor
- Identifier
- Language (ISO)
- Govt Doc. No.

Search for:
Customization: Item Display

To modify the metadata displayed in item screen, modify `dspace.cfg` and `Messages.properties`.

Remember: After making changes, re-index everything (go to `/dspace/bin` and execute the command, `./index-all`)
Customization: Item Display

In `dspace.cfg`, add the new field to be displayed/ or change the order to display

```
```

In `Messages.properties`, name the field to be displayed

```
metadata.dc.title = Title
metadata.dc.title.alternative = Other Titles
metadata.dc.contributor.* = Authors
metadata.dc.contributor.author = Authors
...
metadata.dc.identifier.isbn = ISBN
```
Customization: Browse Fields

To modify the browse fields in navigation bar, modify `dspace.cfg` located in `/dspace/config/dspace.cfg`.

In `dspace.cfg`, uncomment the following lines to specify the metadata fields to be browsed in DSpace: “Browse by Date”, “Browse Authors”, “Browse Titles” and “Browse Subjects”:

```plaintext
# webui.browse.index.date = dc.date.issued
# webui.browse.index.author = dc.contributor.*
# webui.browse.index.title = dc.title
# webui.browse.index.subject = dc.subject.*
```

After modification in any of the browse indices in `dspace.cfg`, one must Re-index for changes to take place.
Customization: Change Browse Layout

In `dspace.cfg`, one can change the metadata fields which are displayed for each item in browse item listing.

Make the required changes in the following single line in `dspace.cfg` and uncomment it:

```
#webui.itemlist.columns = dc.date.issued(date), dc.title, dc.contributor.*
```

Stop and restart Tomcat for changes to take affect.
1. Configure media filters in dspace.cfg under

```
### Media Filter plugins###

Enable or disable specific media filter from the list:-

plugin.sequence.org.dspace.app.mediafilter.Mediafilter = \
  org.dspace.app.mediafilter.PDFFilter, \
  org.dspace.app.mediafilter.HTMLFilter, \
  org.dspace.app.mediafilter.WordFilter, \
  org.dspace.app.mediafilter.JPEGFilter
```

2. Schedule filter-media by cron entry

```
0 2 ** * * * /dspace/bin/filter-media
```

3. Modify

```
search.maxfieldlength = 10000
```

Set it to -1 for indexing unlimited no. of words

4. Re-index for the changes to take effect
Customization: Summary

Restart (Restart the webserver after configuration changes)
1. **Stop Tomcat**
   
   `[tomcatpath]/bin/shutdown.sh`

2. **Start Tomcat**
   
   `[tomcatpath]/bin/startup.sh`

Re-index DSpace
1. **Log on to the machine running dspace.**
2. **Change directory to `/dspace/bin`**
3. **Run the re-index command**
   
   `./index-all`
4. **Stop and restart Tomcat.**
Dspace and OAI

- **ShodhGanga harvest URL**

- **ShodhGanga_atom**
  - http://shodhganga.inflibnet.ac.in/oai/request?verb=ListRecords&metadataPrefix=ore

- **ShodhGanga_mets**
  - http://shodhganga.inflibnet.ac.in/oai/request?verb=ListRecords&metadataPrefix=mets

- **ShodhGanga_RDF**
  - http://shodhganga.inflibnet.ac.in/oai/request?verb=ListRecords&metadataPrefix=rdf

- **Get Shodhganga oai_dc records by Identifier**
  - http://shodhganga.inflibnet.ac.in/oai/request?verb=GetRecord&identifier=oai:ietd.inflibnet.ac.in:10603/19&metadataPrefix=oai_dc

- **Get identifier of Shodhganga Records**
  - http://shodhganga.inflibnet.ac.in/oai/request?verb=ListIdentifiers&metadataPrefix=oai_dc

- **List Metadata format**
  - http://shodhganga.inflibnet.ac.in/oai/request?verb=ListMetadataFormats