Internationalization Support (I18nSupport)

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6 Contributors

Language packs stored and managed in Github

The language packs (messages files) contributed by the community are available on github. They are managed outside of the core DSpace project to allow more regular updates and releases.

- dspace-api-lang: API and JSPUI Language project
- dspace-xmlui-lang: XMLUI Language project

Aside from the message catalogs included in these projects, there is a number of other files that can be localized. These include help pages, input forms and email templates. They are currently kept here until they are moved into the message catalogs in the future.

Contributing new Localizations

Thank you!

Please see our general advice on contributing to DSpace.

If you supply new translations, please make sure that they correspond to a stable release of DSpace and do not contain English tags nor references to your DSpace instance (e.g. name of your Institution). In partially translated Messages.xx.properties, just omit the untranslated tags. Messages.properties will be used as a fallback and untranslated tags are easier to detect with tools like the Eclipse Resource Bundle Editor if omitted.

Available translations of Messages.properties for JSP-UI

| Language | Locale | Initial | 1.3.1 | 1.3.2 | 1.4 | 1.4.1 | 1.4.2 | 1.5 | 1.5.1 | 1.5.2 | 1.6.0 | 1.6.1 | 1.6.2 | 1.7.0 | 1.7.1 | 1.8.0 | 1.8.1 | 1 |
|----------|--------|---------|-------|-------|-----|-------|-------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Basque   | eu     |         |       |       |     |       |       |     |       |       |       |       |       |       |       |       |       |       |
| Bulgarian| bg     |         |       |       |     |       |       |     |       |       |       |       |       |       |       |       |       |       |
| Catalan  | ca     |         |       |       | x   |       |       | x   |       |       |       |       |       |       |       |       |       |
| Chinese  | zh_cn  |         |       |       |     |       |       |     |       |       |       |       |       |       |       |       |       |       |
| Czech    | cs     |         |       |       |     |       |       | x   |       |       |       |       |       |       |       |       |       |
| French   | fr     |         |       |       |     |       |       | x   |       |       |       |       |       |       |       |       |       |
| Galician | gl     |         |       |       |     |       |       | x   |       |       |       |       |       |       |       |       |       |
### Available translations of messages.xml for XML-UI

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</table>

### Localized parts of DSpace not yet managed on Github

**Messages.properties not corresponding to a valid Locale**

<table>
<thead>
<tr>
<th>Language (code)</th>
<th>Provided by</th>
<th>Status</th>
<th>Files</th>
<th>Comments</th>
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<tbody>
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<td>Messages_cht_properties.mht</td>
<td>Based on v1.3.1 of Messages.properties</td>
</tr>
</tbody>
</table>

### Other parts of DSpace which can be translated

**DSpace 1.6.0**
- Set of localized files for Ukrainian

**DSpace 1.5.2**
- Set of localized files for Ukrainian
DSpace 1.5.1

- Japanese-language-packs-1.5.1.tar.gz
- Set of localized file for Spanish

DSpace 1.4.2

<table>
<thead>
<tr>
<th>File</th>
<th>French</th>
<th>German</th>
<th>Italian</th>
<th>Russian</th>
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<td>German.zip</td>
<td>Italian.zip</td>
<td>Russian.zip</td>
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<td>Change_password_fr.txt</td>
<td>Change_password_de.txt</td>
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<tr>
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<td>Feedback_de.txt</td>
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<td>Submit_reject_de.txt</td>
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<td>dspace-source/config/emails/submit_task</td>
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<td>dspace-source/config/default.license</td>
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Misc resources not part of DSpace

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<thead>
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JSPUI Basic Technical Considerations

The Java Standard Tag Library v1.0 is used.

The Use of Tags and Message Keys

Basic steps for using Tags in a JSP:

- include the Standard Tag Library in the JSP - `<%@ taglib uri="http://java.sun.com/jsp/jstl/fmt" prefix="fmt" %>`
- define the key you want in config/Messages.properties
- use the key instead of the text in the JSP, see examples below

The messages may can now be changed in the appropriate config/Messages_xx.properties file. This must be done at build-time, because it is placed in the dspace.war.

Example: Basic key use

- Old JSP

  `<h1>Search Results</h1>`

- New JSP
Example: Use of parameters

Phrases may have parameters to be passed in, to make the job of translating easier, reduce the number of 'keys' and to allow translators to make the translated text flow more appropriately for the target language.

**Old JSP**

```html
<p>Results <%= r.getFirst() %> to <%= r.getLast() %> of <%= r.getTotal() %></p>
```

**New JSP**

```html
<fmt:message key="jsp.search.results.text">
<fmt:param><%= r.getFirst() %></fmt:param>
<fmt:param><%= r.getLast() %></fmt:param>
<fmt:param><%= r.getTotal() %></fmt:param>
</fmt:message>

(Note: JSTL 1.0 does not seem to allow JSP `<%= %>` expressions to be passed in as values of attribute in `<fmt:param value=""/>`)
#!/usr/bin/env python
import sys

class MessagesXmlParser:
    def __init__(self, filename):
        import xml.etree.ElementTree as etree
        self.keys = []
        tree = etree.parse(filename)
        root = tree.getroot()
        for message in root:
            self.keys.append(message.attrib['key'])

class MessagesPropertiesParser:
    def __init__(self, filename):
        try:
            import jprops
        except:
            print('Error: jprops module for parsing .properties files is missing. Download and follow installation instructions from http://mgood.github.com/jprops/')
            sys.exit(2)
        self.keys = []
        with open(filename) as fp:
            for key, value in jprops.iter_properties(fp):
                self.keys.append(key)

if __name__ == '__main__':
    if len(sys.argv) != 3:
        print("Usage:"
              %s messages.xml messages_XX.xml % (sys.argv[0]))
        print("or"
              %s Messages.properties Messages_XX.properties % (sys.argv[0]))
        sys.exit(1)
    testfile = open(sys.argv[1], 'rb')
    if testfile.readline().find('<?xml') != -1:
        # xml file detected, assume messages.xml
        messages_tmpl = MessagesXmlParser(sys.argv[1])
        messages_in = MessagesXmlParser(sys.argv[2])
    else:
        # assume Messages.properties
        messages_tmpl = MessagesPropertiesParser(sys.argv[1])
        messages_in = MessagesPropertiesParser(sys.argv[2])

    print "Present in %s but missing in %s:" % (sys.argv[1], sys.argv[2])
    for i in set(messages_tmpl.keys) - set(messages_in.keys):
        print i

    print "Present in %s but missing in %s:" % (sys.argv[2], sys.argv[1])
    for i in set(messages_in.keys) - set(messages_tmpl.keys):
        print i

Newer version of the script which allows comparison and dumping in columnar TSV of several messages files simultaneously: dspace-i10n-check2.py. Use example:
Usage examples

```bash
./dspace-i10n-check2.py --compare file1 file2
./dspace-i10n-check2.py --dump file1
./dspace-i10n-check2.py --dump-tsv-for-translation /dspace/webapps/xmlui/i18n/messages.xml /dspace/webapps/xmlui/i18n/messages_es.xml /dspace/webapps/xmlui/i18n/messages_it.xml
```

Python script to prepare a list of untranslated XMLUI strings when updating and older translation

A python script to generate a messages_xx.xml file by merging existing translations from an older committed translation to the latest messages.xml file. Thus, you get a file with the latest keys, where you only need to look for the untranslated strings.

https://github.com/evelthon/dspace-xmlui-lang-util

PHP script to check for missing/extra strings

Given the English original (messages.xml and the corresponding translation file, this script will report both strings missing in the translation file and extra strings that shouldn't be in the translation.

```bash
checkkeys.php
```
<?php
if ($argc != 3) {
    echo "Usage: checkkeys.php <master> <tocheck> \n";
    exit(1);
}

$masterKeys  = getKeys($argv[1]);
$toCheckKeys = getKeys($argv[2]);

print "IN $argv[1] BUT NOT IN $argv[2]: \n";
printMissing($masterKeys, $toCheckKeys);

print "IN $argv[2] BUT NOT IN $argv[1]: \n";
printMissing($toCheckKeys, $masterKeys);

function printMissing($reference, $test)
{
    foreach ($test as $value) {
        if (! in_array($value, $reference)) {
            echo "$value \n";
        }
    }
}

function readFileMessage($path)
{
    if (! $fileContent = @file($path)) {
        echo "Can't open $path \n";
        exit(1);
    }
    return $fileContent;
}

function getKeys($path)
{
    $fileContent = readFileMessage($path);
    return readKeys($fileContent);
}

function readKeys($file)
{
    $keys = [];
    foreach ($file as $key => $line) {
        if (strpos($line, '<message key="') === false) {
            continue;
        }
        $key = getKey($line);
        $keys[] = $key;
    }
    return $keys;
}

function getKey($line)
{
    $line = trim($line);
    $line = substr($line, 14);
    $charEnd = strpos($line, ">");
    $key = substr($line, 0, $charEnd - strlen($line));
    return $key;
}
### Usage examples - checkkeys.php

```bash
php ./checkkeys.php file1 file2
php ./checkkeys.php /dspace/webapps/xmlui/i18n/messages.xml /dspace/webapps/xmlui/i18n/messages_es.xml /dspace/webapps/xmlui/i18n/messages_it.xml
```

### Perl script for unused keys

Here's a useful Perl script that finds all of the dictionary keys in the JSPs and the `Messages.properties` file, and prints out keys that are used in the JSPs but aren't in the dictionary, and vice versa. Note: slightly out of date, can't detect message keys used in e.g. `localeSupport.getLocalizedMessage()` You'll need to change the variables at the top of the file to point to your DSpace source dir.

### Eclipse Resource Bundle Editor

The [Eclipse Resource Bundle Editor](https://eclipse.org/jdtui/docs/3.4/manual/pages/eclipse-resource-bundle-editor.html) is a useful tool to create and manage Messages.properties files. It is an “Eclipse plugin for editing Java resource bundles. Lets you manage all localized properties files in one screen. Some features: sorted keys, warning icons on missing keys/values, conversion to/from Unicode, hierarchical view of keys, more...”

### Contributors

The University of Patras in Greece have done the initial hard work of separating out text from the JSPs into a dictionary file and linking to it. MARTON Jozsef has build on this by parameterising the UI text.