DSpace Customizations – Quick Reference

See: DSpace "How To Guide":
http://www.dspace.org/images/Training_Materials/dspacehowtoguide.pdf
DSpace 1.8 Manual
https://wiki.duraspace.org/display/DSDOC18

Back up before making changes!

It is important to remember when you have used ssh in to make changes to configuration or theme files in dspace to make a **backup of the existing file first**. Either put the configuration files in a version control system like git, or simply make a copy the file before making your change. By appending a date (or date and time) to the backup file name, you can easily keep track of multiple changes. This is useful if you don't immediately notice that your change broke something.

For example, before editing the dspace.cfg file as the **dspace** user, go into the correct directory, and make a backup file

```
cd /usr/local/dspace/config

cp dspace.cfg dspace.cfg.bak.20120810
```

This example copied the dspace.cfg file to a file called dspace.cfg.bak.20120810 (the 20120810 being the date of the change)

Locations for Customizations

Customizations	Files
Primary Configuration settings	/usr/local/dspace/config/dspace.cfg
Label/Terms and Languages modifications	/usr/local/dspace/webapps/xmlui/i18n
Specify themes for particular collections	/usr/local/dspace/config/xmlui.conf
Interface Themes	/usr/local/dspace/webapps/xmlui/themes
Default 'Reference' Theme CSS	/usr/local/dspace/webapps/xmlui/themes/Reference/lib/style.css
Default 'Reference' Theme image location	/usr/local/dspace/webapps/xmlui/themes/Reference/images
Text on home page	/usr/local/dspace/config/news-xmlui.xml
Change license users use when submitting items (may not be activated in submission process)	/usr/local/dspace/config/default.license
Custom submission forms	/usr/local/dspace/config/input-forms.xml /usr/local/dspace/config/item-submission.xml
Text for System generated emails	/usr/local/dspace/config/emails/

Other useful file locations

Tool/Resource	Location

Dspace command line management tool	/usr/local/dspace/bin/dspace
Digital Object Bitstreams	/usr/local/dspace/assetstore
Tomcat log files	/usr/local/dspace/log

Changing between Unix Users

In a unix system there are some commands that will let you either switch the currently logged in user to a different one, or run a command as a different user.

To run a command with the elevated permissions of the root user, you use the command *sudo* followed by the command you want to run as root. The user who is running the command must have sudo privileges, which are granted when they are a member of the sudo group.

An example of how to use sudo follows. You can only restart the apache service as root, so a user who has a **user who has sudo privileges** can run the following command to restart apache

```
sudo service apache2 restart
```

This command will prompt for the currently running users password, and once that is correctly entered, run the 'service apache2 restart' command as the root user.

Another userful command is *su*. This allows you to change your current user to another one. For example the command

```
su - dspace
```

Will prompt for the dspace user password, and then log in as the dspace user. Now commands can be run as dspace. Once that is done, typing

```
exit
```

will return the shell to the previously logged in user.

In the previous example, the – indicates to run any login commands associated with the user. Also of note is that if the currently logged in user is root, no password is needed for *su*.

The dspace User

The tomcat server that runs the dspace program is running as the unix 'dspace' user. Due to this, the 'dspace' user needs read (and sometimes write) access to the various files in /usr/local/dspace where the program and data live. When editing or uploading changes to configuration files it is recommended that you do this as the dspace user to help avoid files ending up with the wrong permissions or file ownership.

Unix vs dspace users

There is no connection between unix users on the system (i.e. user accounts that let you log in via ssh), and dspace users (i.e. accounts that let you log into the dspace program via the web browser). Thus users who need access to ssh in and access to the dspace system will need both a unix shell account and a dspace account.

Restarting the dspace Process

Sometimes after making changes to configuration files in the dspace system you have to restart the tomcat service for the changes to take effect. Generally, you can make changes to the css and templates without a restart, but will for changes in the config directory. When restarting the server, make sure that other users are not actively adding items, metadata, etc. to avoid interrupting their workflow.

When you restart the tomcat service, it can take a little while before it is active and accepting connections. It is best practice to wait 20 seconds after a tomcat restart and then restart the apache process to make sure the connector between tomcat and apache is functioning properly.

Service restarts need to be done by the root user, so this example will use *sudo* to gain the necessary privileges. So to restart dspace, as a **user who has sudo privileges** run the following command:

```
sudo service tomcat6 restart && sleep 20 && sudo service apache2 restart
```

You will need to enter the unix password of the logged in user for the command to work.

Generating Thumbnails

When you add bitstreams, thumbnails and content indexing is performed asynchronously by the 'dspace filter-media' command attached to a cron task. By default, the cron task is set to run in the dspace users crontab once a night. You can select a more frequent interval, but be careful that you don't have so short an interval that runs overlap.

You can also run this process manually (for example, after you have loaded a batch of images, and you want to see the thumbnails). To do this, as the **dspace** user, run:

```
/usr/local/dspace/bin/dspace filter-media
```

This will scan the collection for all unthumbnailed/unindexed images and process them.

If you change the thumbnail size in the dspace.cfg file, or for some other reason want to delete all the thumbnails that were generated, you can run the following command to recreate them for all items. To do this, as the **dspace** user, run:

```
/usr/local/dspace/bin/dspace filter-media -f
```

PostgreSQL Database

dspace uses the PostgreSQL database to store almost all of its information other than the bitstreams. Usually, not much needs to be done with postgreSQL other than to make sure that it is running before

the tomcat server (that hosts dspace) starts. If necessary you can start, stop, or restart the postgresql server by running the following command **as a user who has sudo privleges**

```
sudo service postgresql start
```

In this example the user started the postgresql server.

An important thing to note is that if you are doing a filesystem backup of the server, you won't necessarily end up a backup of the database in a consistent state. You can make a manual backup of the database with the following command as the **dspace user**:

```
pg_dump dspace > /home/dspace/dspace.sql
```

This creates a text file containing the SQL commands needed to recreate the dspace database in /home/dspace/dspace.sql

Nightly cron jobs (Scheduled Tasks)

Several cron jobs have been created as part of the dspace installation. There are listed below for reference. Notice that most of these commands are running the *dspace* command line tool to invoke various tasks. You can run these tasks manually on the command line as the **dspace** user, and this is often a useful way to either trigger the commands to meet an immediate need or for troubleshooting.

```
# Send out subscription e-mails at 01:00 every day

0 1 * * * /usr/local/dspace/bin/dspace sub-daily

# Run the media filter at 02:00 every day

0 2 * * * /usr/local/dspace/bin/dspace filter-media

# Run the checksum checker at 03:00

0 3 * * * /usr/local/dspace/bin/dspace checker -lp

# Mail the results to the sysadmin at 04:00

0 4 * * * /usr/local/dspace/bin/dspace checker-emailer -c

# Clean up the database nightly at 4.20am

20 4 * * * vacuumdb --analyze dspace > /dev/null 2>&1

# Run stat analysis

0 1 * * * /usr/local/dspace/bin/dspace stat-general

0 1 * * * /usr/local/dspace/bin/dspace stat-monthly

0 2 * * * /usr/local/dspace/bin/dspace stat-report-general

0 2 * * * /usr/local/dspace/bin/dspace stat-report-monthly
```