Upgrading From 1.7.x to 1.8.x

In the notes below `[dspace]` refers to the install directory for your existing DSpace installation, and `[dspace-source]` to the source directory for DSpace 1.8. Whenever you see these path references, be sure to replace them with the actual path names on your local system. You should also check the DSpace Release 1.8.0 Notes to see what changes are in this version.

Changes to the DSpace 1.8 Upgrade / Configuration Process

In DSpace 1.8.0, there have been a few significant changes to how you upgrade and configure DSpace. Notably:

- **The dspace.cfg has been "split up":** Many "module" configurations have now been moved out of the 'dspace.cfg' and into separate configuration files in the `[dspace]/config/modules/` directory.
  - Authentication Configurations are now in `[dspace]/config/modules/authentication*.cfg` files
  - Batch Metadata Editing Configurations are now in the `[dspace]/config/modules/bulkedit.cfg` file
  - Discovery Configurations are now in the `[dspace]/config/modules/discovery.cfg` file
  - OAI-PMH / OAI-ORE Configurations are now in the `[dspace]/config/modules/oai.cfg` file
  - Solr Statistics Configurations are now in the `[dspace]/config/modules/solr-statistics.cfg` file
  - SWORD Configurations are now in `[dspace]/config/modules/sword*.cfg` files
  - *All other DSpace configurations are still in the `dspace.cfg` configuration file.*
- **Behavior of 'ant update' has changed:** The `ant update` upgrade command now defaults to **replacing** any existing configuration files (though the existing configuration files will first be backed up to a file with the suffix `*.old`).
  - In prior versions of DSpace (before 1.8.0), this `ant update` command would leave existing configuration files intact (and you would have to manually merge in new configuration settings, which would be in a file with the suffix `*.new`). If you prefer this previous behavior, you can still achieve the same result by running:
    - `ant -Doverwrite=false update`
  - **WARNING:** If you choose to run `ant -Doverwrite=false update` please be aware that this will not auto-upgrade any of your configuration files. This means you must closely watch the output of this command, and ensure you manually upgrade all configuration files in the `[dspace]/config/` directory as well as all Solr configurations/schemas in the `[dspace]/solr/search/conf/` and `[dspace]/solr/statistics/conf/` directories.
- **The structure of the source release has now been changed:** Please see Advanced Customisation for more details.

Backup your DSpace

Before you start your upgrade, it is strongly recommended that you create a backup of your DSpace instance. Backups are easy to recover from; a botched install/upgrade is very difficult if not impossible to recover from. The DSpace specific things to backup are: configs, source code modifications, database, and assetstore. On your server that runs DSpace, you might additionally consider checking on your cron/scheduled tasks, servlet container, and database.

Make a complete backup of your system, including:

- Database: Make a snapshot/dump of the database. For the PostgreSQL database use Postgres' pg_dump command. For example:

```
pg_dump -U [database-user] -f [backup-file-location] [database-name]
```

- Assetstore: Backup the directory (`[dspace]/assetstore` by default, and any other assetstores configured in the `[dspace]/config/dspace.cfg` "assetstore.dir" and "assetstore.dir.#" settings)
- Configuration: Backup the entire directory content of `[dspace]/config`.
- Customizations: If you have custom code, such as themes, modifications, or custom scripts, you will want to back them up to a safe location.

Upgrade Steps

1. **Download DSpace 1.8** Either download DSpace 1.8 from DSpace.org or check it out directly from the SVN code repository. If you downloaded DSpace do not unpack it on top of your existing installation. Refer to Installation Instructions, Step 3 for unpacking directives.
2. **Merge any customizations.** If you have made any local customizations to your DSpace installation they will need to be migrated over to the new DSpace. Customizations are typically housed in one of the following places:
   - JSPUI modifications: `[dspace-source]/dspace/modules/jspui/src/main/webapp/`
   - XMLUI modifications: `[dspace-source]/dspace/modules/xmlui/src/main/webapp/`
   - Config modifications: `[dspace]/config`
3. **Build DSpace.** Run the following commands to compile DSpace:

   ```
   cd [dspace-source]/dspace/
   mvn -U clean package
   ```

   You will find the result in `[dspace-source]/dspace/target/dspace-[version]-build.dir` . Inside this directory is the compiled binary distribution of DSpace. Before rebuilding DSpace ('package'), the above command will clean out any previously compiled code ('clean') and ensure that your local DSpace JAR files are updated from the remote maven repository.
4. **Stop Tomcat.** Take down your servlet container. For Tomcat, use the `$CATALINA_HOME/shutdown.sh` script. (Many Unix-based installations will have a startup/shutdown script in the `/etc/init.d` or `/etc/rc.d` directories.)
5. **Update DSpace.**
   a. Update the DSpace installed directory with the new code and libraries. Issue the following commands:

```
cd [dspace-source]/dspace/target/dspace-[version]-build.dir
ant -Dconfig=[dspace]/config/dspace.cfg update
```

Changes to the behavior of the 'ant update' script



The `ant update` script has changed slightly as of DSpace 1.8.0. It now defaults to replacing your existing configuration files (after backing them up first). See the Changes to the DSpace 1.8 Upgrade / Configuration Process note at the top of this page for more details.

b. Apply database changes to your database by running one of the following database schema upgrade scripts.
Backup Your Database First



Applying a database change will alter your database! The database upgrade scripts have been tested, however, there is always a chance something could go wrong. So, do yourself a favor and create a backup of your database before you run a script that will alter your database.

i. PostgreSQL: [dspace-source]/dspace/etc/postgres/database_schema_17-18.sql
ii. Oracle: [dspace-source]/dspace/etc/oracle/database_schema_17-18.sql

6. **Update your DSpace Configurations.**
   a. Merge existing configurations: After updating DSpace, you may notice a series of `*.old` files in your newly updated `[dspace]/config/` directory (and all sub-directories). During the update process, if there is a difference between your old 1.7-compatible configuration file and the new 1.8-compatible configuration file, your previous settings will be moved to a `*.old` file. You may want to review the differences between the `*.old` file and the new version of that file, and ensure your previous configurations/settings are merged into the new configuration file. One way to compare these files is by using a comparison-utility like `diff` or a text editor that supports file comparison.
   b. Set New Configurations: There are new configuration settings in the new release that add or change functionality. You should review these new settings and ensure that they are set according to your needs.
      i. New settings for Creative Commons licensing in `dspace.cfg`
      ii. New settings for RSS feeds (see "webui.feed.podcast.*") in `dspace.cfg` which now support richer features, such as iTunes podcast and publishing to iTunesU
      iii. **Several major configuration sections have now been removed from the `dspace.cfg` and separated into their own config files.** Configuration sections which have been moved include Authentication settings, Batch Metadata Editing settings, Discovery settings, OAI-PMH/OAI-ORE settings, Statistics settings and SWORD settings. So, any configurations from these sections should be removed from your existing dspace.cfg file, as they will be ignored. For more information, see the Changes to the DSpace 1.8 Upgrade / Configuration Process note at the top of this page.
      iv. Several new configurations files have been created in the `[dspace]/config/modules/` directory. Each of these corresponds to a new feature in 1.8.0 (or a configuration section which has now been moved out of the dspace.cfg file):
         - `authentication-*.cfg` files : new location for Authentication Configurations.
         - `bulkedit.cfg` : new location for Batch Metadata Editing Configurations.
         - `discovery.cfg` : new location for Discovery Configurations.
         - `fetchccdata.cfg` : configuration for new "Fetch CC Data" Curation Task.
         - `oai.cfg` : new location for OAI-PMH / OAI-ORE Configurations.
         - `solr-statistics.cfg` : new location for Solr Statistics Configurations.
         - `spring.cfg` : configuration file for DSpace Service Manager (should not need modification).
         - `submission-curation.cfg` - configuration file for new Virus Scanning on Submission feature.
         - `sword-client.cfg` : configuration file for new SWORDv1 Client feature.
         - `sword-server.cfg` : new location for SWORDv1 Server Configurations.
         - `swordv2-server.cfg` : configuration file for new SWORDv2 Server feature.
         - `translator.cfg` : configuration for new "Microsoft Translator" Curation Task.
         - `workflow.cfg` : configuration for new Configurable Workflow feature.
      v. Finally, there is a new `[dspace]/config/spring/` directory which holds Spring Framework configuration files. *The vast majority of users should never need to modify these settings, but they are available for hardcore developers who wish to add new features via the DSpace Services Framework (based on Spring Framework).*
7. **Generate Browse and Search Indexes**. The search mechanism has been updated in 1.8, so you must perform a full reindex of your site for searching and browsing to work. To do this, run the following command from your DSpace install directory (as the dspace user):

```
[dspace]/bin/dspace index-init
```

8. **Deploy Web Applications**. If necessary, copy the web applications files from your `[dspace]/webapps` directory to the subdirectory of your servlet container (e.g. tomcat):

```
cp -R [dspace]/webapps/* [tomcat]/webapps/
```

See the installation guide for full details.

9. **Restart servlet container.** Now restart your Tomcat/Jetty/Resin server program and test out the upgrade.

Optional Upgrade Step: Fix Broken File Statistics

In DSpace 1.6.x & 1.7.x the file download statistics were generated without regard to the bundle in which the file was located. In DSpace 1.8.0 it is possible to configure the bundles for which the file statistics are to be shown by using the **query.filter.bundles** property. If required the old file statistics can also be upgraded to include the bundle name so that the old file statistics are fixed.

Updating the file statistics will ensure that old file downloads statistics data will also be filterable using the filter bundle feature. The benefit of upgrading is that only files within, for example, the "ORIGINAL" bundle are shown as opposed to also showing statistics from the LICENSE bundle. More information about this feature can be found at Statistics differences between DSpace 1.7.x and 1.8.0

Backup Your statistics data first

Applying this change will involve dumping all the old file statistics into a file and re-loading them. Therefore it is wise to create a backup of the [DSpace]/solr/statistics/data directory. It is best to create this backup when the Tomcat/Jetty/Resin server program isn't running.

When a backup has been made, start the Tomcat/Jetty/Resin server program.
The update script has one option (`-r`) which will, if given, not only update the broken file statistics but also delete statistics for files that were removed from the system. If this option isn't active, these statistics will receive the "BITSTREAM_DELETED" bundle name.

```
#The -r is optional
[dspace]/bin/dspace stats-util -b -r
```