

DSpace User Manual



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1. INTRODUCTION TO DSPACE

DSpace is an open-source digital repository platform designed for institutions, organizations, and libraries to store, manage, and share their digital assets in a secure, organized, and accessible manner. It was developed in 2002 by the Massachusetts Institute of Technology (MIT) and Hewlett-Packard (HP) and has since become one of the most widely adopted digital repository systems, with installations in more than 100 countries worldwide.

DSpace provides a centralized platform for storing and managing digital content, including research articles, theses, dissertations, images, videos, and more. It is designed to support the full lifecycle of digital content, from creation to preservation, and to provide access to digital assets for research, learning, and collaboration.



One of the key features of DSpace is its user-friendly interface, which allows users to easily deposit and manage their digital content. The platform is also highly customizable, so organizations can tailor it to meet their specific needs and requirements. This customization can include customizing the look and feel of the interface, adding additional metadata fields, and integrating with other systems and services.

Another important aspect of DSpace is its support for digital preservation. The platform includes version control features that allow organizations to manage and track multiple versions of the same item over time. It also supports access controls, so organizations can manage who has access to their digital content and what they are allowed to do with it. This includes features such as embargo periods, where content can be restricted for a set period of time, and access policies, which allow organizations to control who can see and use their content.

DSpace also supports integration with other systems and services, such as OAI-PMH (Open Archives Initiative Protocol for Metadata Harvesting) and SWORD (Simple Web-service Offering Repository Deposit). This integration enables organizations to share their digital content with other repositories and services, and to deposit content into DSpace using other platforms and tools. This makes it easier for organizations to manage their digital content, and to ensure its long-term preservation.

The platform is highly scalable and flexible, making it suitable for organizations of all sizes, from small libraries to large research institutions. It can be used to manage small collections of digital content, as well as large and complex repositories. The platform is designed to be modular, so organizations can add or remove functionality as needed.

In addition to its core functionality, DSpace also provides a range of advanced features and customization options. This includes the ability to configure metadata fields, add custom themes and styles, and add plugins and extensions to enhance the functionality of the platform.

Overall, DSpace is a robust and reliable digital repository platform that provides institutions, organizations, and libraries with the tools and features they need to store, manage, and share their digital assets in a secure and accessible manner. With its user-friendly interface, flexible customization options, and support for digital preservation and integration, DSpace is an excellent choice for organizations looking to preserve and access their digital content over time.

DSpace is the software of choice for academic, non-profit, and commercial organizations building open digital repositories. It is free and easy to install “out of the box” and completely customizable to fit the needs of any organization. DSpace preserves and enables easy and open access to all types of digital content including text, images, moving images, mpegs and data sets. And with an ever-growing community of developers, committed to continuously expanding and improving the software.

1.1 HISTORY OF DSPACE:

The first public version of DSpace was released in November 2002, as a joint effort between developers from MIT and HP Labs. Following the first user group meeting in March 2004, a group of interested institutions formed the DSpace Federation, which determined the governance of future software development by adopting the Apache Foundation's community development model as well as establishing the DSpace Committer Group. In July 2007 as the DSpace user community grew larger, HP and MIT jointly formed the DSpace Foundation, a not-for-profit organization that provided leadership and support. In May 2009 collaboration on related projects and growing synergies between the DSpace Foundation and the Fedora Commons organization led to the joining of the two organizations to pursue their common mission in a not-for-profit called DuraSpace. DuraSpace and LYRASIS merged in July 2019. Currently the DSpace software and user community receives leadership and guidance from LYRASIS.



Massachusetts
Institute of
Technology



1.2 VISION AND MISSION OF DSPACE:

Vision: The DSpace Project will produce the world's choice for repository software providing the means for making information openly available and easy to manage.

Mission: We will create superior open source software by harnessing the skills of an active developer community, the energy and insights of engaged and active users, and the financial support of project members and registered service providers.

DSpace software will:

1. Focus on the Institutional Repository use case.
2. Be lean, agile, and flexible.
3. Be easy and simple to install and operate.
4. Include a core set of functionality that can be extended to or integrated with complementary services and tools in the larger scholarly ecosystem.

1.3 MEMBERS OF DSPACE:

DSpace Members are leaders from university, research, library organizations, and others, who have made a financial commitment to our open source projects. As such they have become a partner in governance, ensuring that DuraSpace projects continue to serve the global communities that depend on them into the future.

1.4 FEATURES OF DSPACE:

Application Architecture: DSpace is a full stack web application, consisting of a database, storage manager and front-end web interface. The architecture includes a specific data model with configurable metadata schemas, workflows and browse/search functionality.

Modern, RESTful Web UI: DSpace 7.0 will feature a completely rewritten web user interface based on the Angular 2 JavaScript platform.

Built-in workflows: Originally designed for libraries, the embedded DSpace data model and approval workflows are familiar to librarians and archivists.

Built-in search engine: DSpace comes packaged with Apache Solr, an open source enterprise search platform that enables filtered (faceted) searching and browsing of all objects. The full text of common file formats is searchable, along with all metadata fields. Browse by interfaces are also configurable.

Unlimited File types: DSpace can store any type of file. In addition, it auto recognizes files of most common formats (e.g., DOC, PDF, XLS, PPT, JPEG, MPEG, TIFF).

Metadata: By default, DSpace uses a Qualified Dublin Core (QDC) based metadata schema. Institutions can extend that base schema or add custom QDCLike schemas. DSpace can import or export metadata from other major metadata schemas such as MARC or MODS.

Tools/plugins: DSpace comes with a suite of tools (batch ingest, batch export, batch metadata editing, etc.) and plugins for translating content into DSpace objects. Additionally, commercial plugins are available through service providers.

Security: DSpace provides its own built-in authentication / authorization system, but can also integrate with existing authentication systems such as LDAP or Shibboleth.

Permissions: DSpace allows you to control read/write permissions site-wide, per community, per collection, per item and per file. You may also delegate administrative permissions per community or per collection.

Disaster Recovery: DSpace allows you to export all of your system content as AIP (Archival Information Packages) backup files. These AIPs can be used to restore your entire site, or restore individual communities, collections or items.

OAI-PMH / SWORD (v1 and v2) / OpenAIRE / Driver: DSpace complies with standard protocols and best practices for access, ingest, and export.

REST: DSpace provides RESTful APIs in accordance with modern web standards.

Configurable Database: Organizations can choose either PostgreSQL or Oracle for the database in which DSpace manages items and metadata.

Configurable File Storage: Files in DSpace can be stored either using a local filesystem (default) or a cloud-based solution, such as Amazon S3.

Data Integrity: On upload, DSpace calculates and stores a checksum for each file. Optionally, you may ask DSpace to verify those checksums to validate file Integrity.

Languages: DSpace is available in over 20 languages.

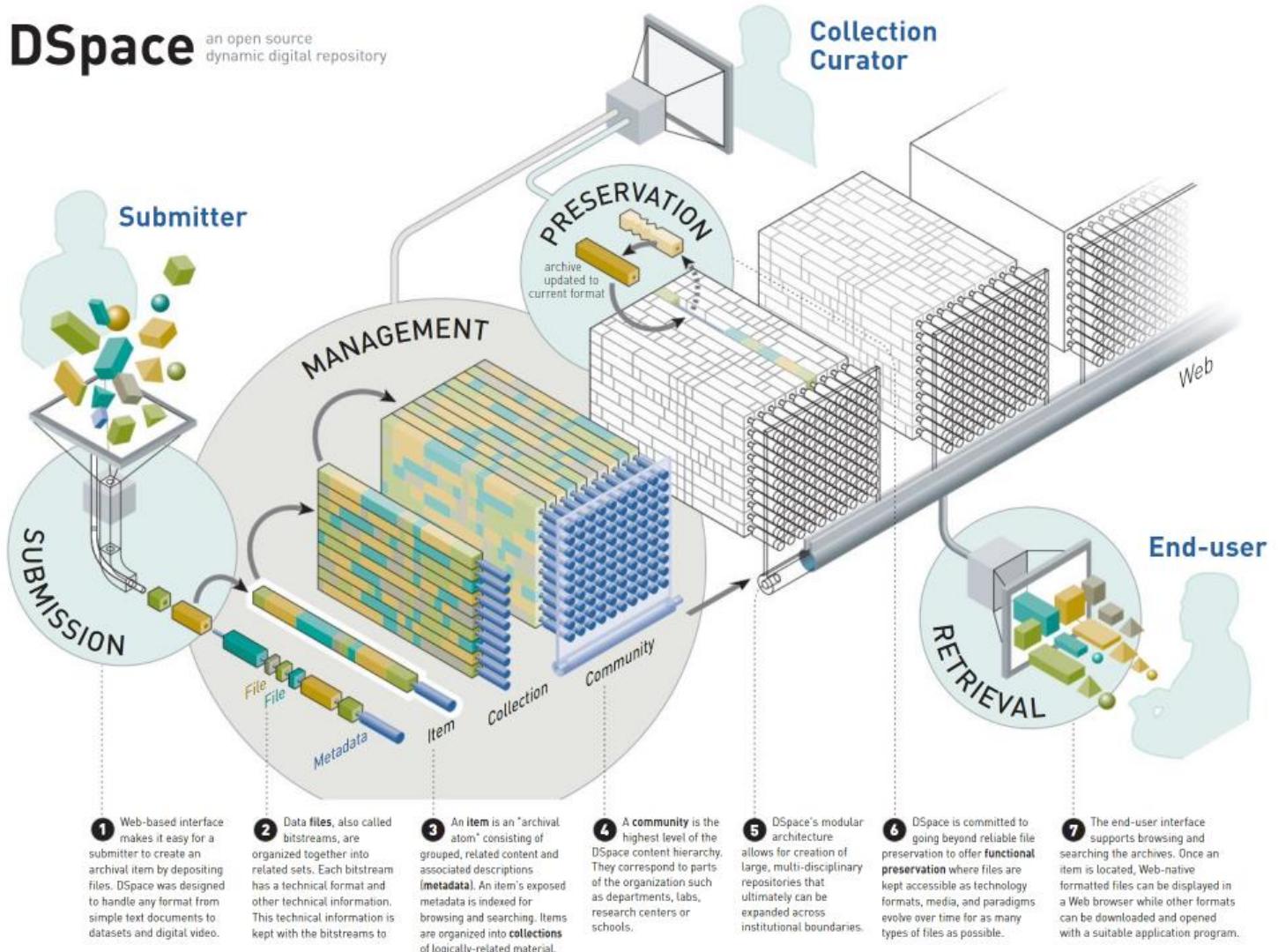
1.5 DSPACE SOFTWARE:

1. DSpace provides tools for management of digital assets, and is commonly used for building institutional repositories.
2. DSpace helps to create, index and retrieve various types of digital contents which include research articles, grey literature, theses, cultural materials, 3D digital scans of objects, photographs, films, audio/videos, scientific datasets, institutional records, educational materials and other forms of content.
3. The collection in DSpace is organized into communities, collections and items. The communities in DSpace include a high-level organizational structure whose only purpose is to divide collections into related groups. Each community contains one or more collections, which are containers for related items. An item is a deposited object of any type: a published article, an image, audio, or video file, notes, a presentation, etc.
4. DSpace is specially designed for digital preservation support for all the documents that are added into the repository in a simple fashion.
5. Focus on the Institutional Repository use case.
6. Be lean, agile, and flexible.
7. Be easy and simple to install and operate.
8. Include a core set of functionality that can be extended to or integrated with complementary services and tools in the larger scholarly ecosystem.



1.6 VISUALIZING DSPACE:

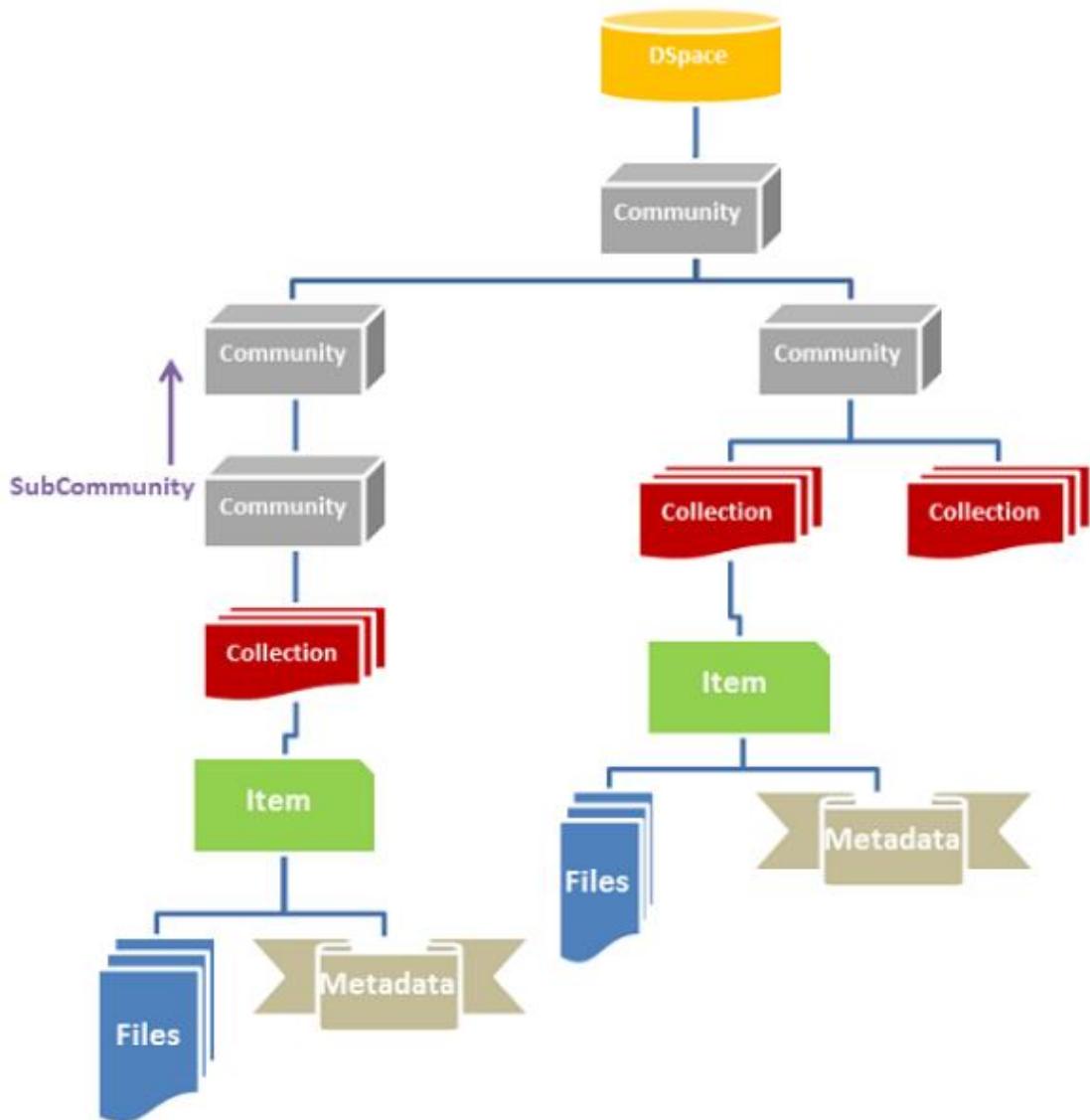
DSpace is freely available as open source software. See the accompanying DSpace diagram below that describes visually how DSpace works at a very high level.



DATA MODELS: There are five main entities which are the hub of information structure and aggregation in DSpace.

- **Communities:** an administrative/logic grouping of one or more collections (and sub communities); e.g. faculties and departments in a single university, centers for geographically distributed organizations; projects/research areas, etc.

- **Collections:** a grouping of items which are analogous for typology (metadata) and workflow; currently collections are the fulcrum of archive customizations
- **Item:** a box which contains both a document metadata and one or more bitstream bundles
- **Bundle:** a grouping of bitstreams used to separate the original documents, those obtained from automatic process, (such as full-text extraction), archival and Creative Commons license
- **Bitstream** (= digital content, usually a fulltext)



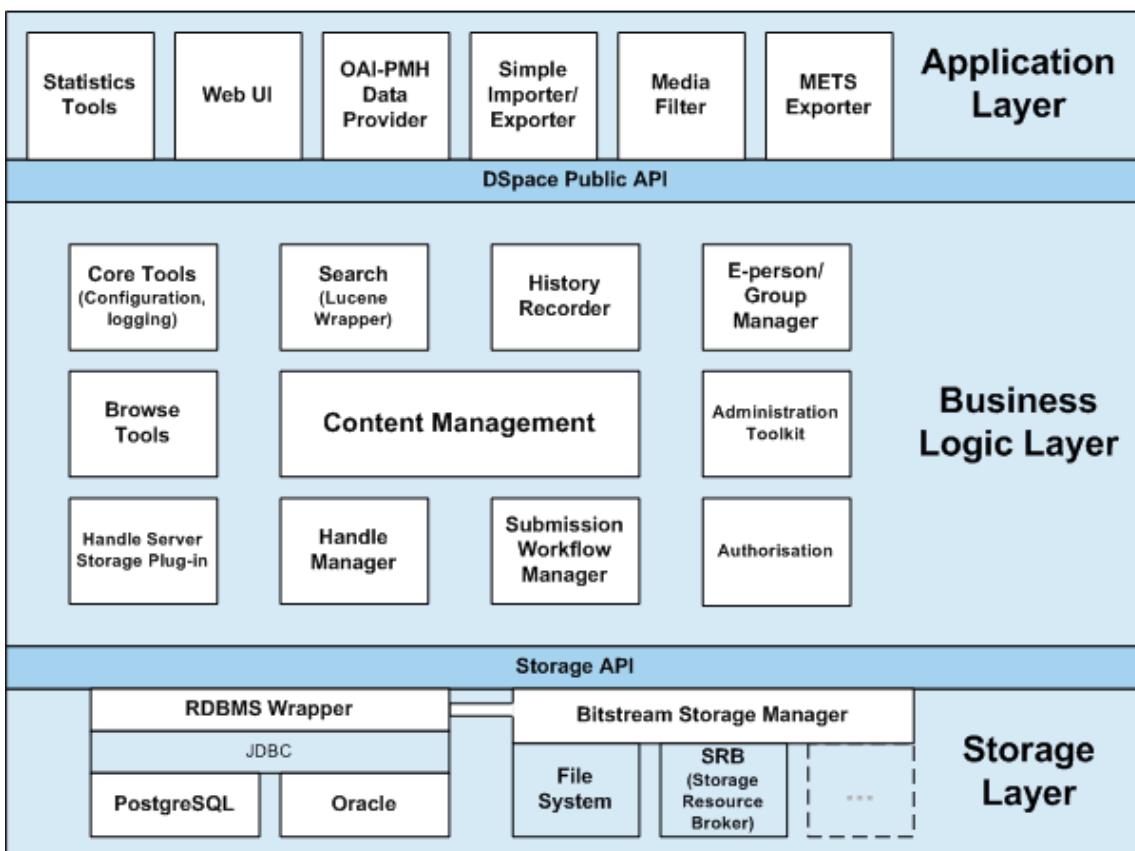
1.7 DSPACE SYSTEM ARCHITECTURE

DSpace is an open-source digital repository platform, and its architecture is composed of three layers:

1. **Presentation layer:** This layer is responsible for displaying the user interface and handling user interactions. The presentation layer uses various technologies, such as HTML, CSS, and JavaScript, to provide a user-friendly interface.
2. **Application layer:** This layer is responsible for implementing the business logic and controlling the workflow. It contains modules that handle tasks such as user authentication, access control, item submission, metadata management, and searching.
3. **Data layer:** This layer stores the digital objects and metadata managed by DSpace. The data layer uses a relational database management system, such as PostgreSQL or MySQL, to store and retrieve information. This layer also includes indexing and searching functionalities to allow for efficient retrieval of digital objects and metadata.

The source code is organized to cohere very strictly to this three-layer architecture. Also, only methods in a component's public API are given the public access level. This means that the Java compiler helps ensure that the source code conforms to the architecture.

Packages within	Correspond to components in
<i>org.dspace.app</i>	Application layer
<i>org.dspace</i>	Business logic layer (except <i>storage</i> and <i>app</i>)
<i>org.dspace.storage</i>	Storage layer



1.8 NOTABLE DSPACE REPOSITORIES:

S.No.	Name	Link	Logo
1.	World Bank Group - Open Knowledge Repository	https://openknowledge.worldbank.org/	
2.	Apollo - University of Cambridge Repository	https://www.repository.cam.ac.uk/	
3.	Digital Access to Scholarship at Harvard	https://dash.harvard.edu/	
4.	DSpace@MIT	https://dspace.mit.edu/	
5.	Spiral - Imperial College London Repository	https://spiral.imperial.ac.uk/	
6.	WHO - IRIS	https://apps.who.int/iris/	
7.	Think Asia	https://think-asia.org/	
8.	Shodhganga: A reservoir of Indian Theses	https://shodhganga.inflibnet.ac.in/	

A full list of institutional repositories using DSpace software as well as others is available via the Registry of Open Access Repositories (ROAR)

Link:

http://roar.eprints.org/cgi/roar_search/advanced?location_country=&software=dspace&type=&order=-recordcount/-date

2. GETTING STARED WITH DSPACE

2.1 DSpace Releases

DSpace version **1.0x** - **2002-11-4**

DSpace version **1.1x** - **2003-5-8**

DSpace version **1.2x** - **2005-5-5**

DSpace version **1.3x** - **2005-10-9**

DSpace version **1.4x** - **2007-5-10**

DSpace version **1.5x** - **2009-4-14**

DSpace version **1.6x** - **2010-6-15**

DSpace version **1.7x** - **2011-5-27**

DSpace version **1.8x** - **2012-2-24**

DSpace version **3.1x** - **2013-1-30**

DSpace version **1.5x** - **2004-04-01**

Dspace version **1.6x** - **2005-08-01**

Dspace version **1.7x** - **2006-12-01**

Dspace version **5.0x** - **2011-06-01**

DSpace version **6.0x** - **2016-06-01**

DSpace version **7.0** - **2020-06-01**

DSpace version **7.1** - **2021-11-01**

DSpace version **7.2** - **2022-10-07**

DSpace version **7.3** - **2022-06-27**

DSpace version **7.4** - **2022-10-10**

2.2 DSpace Hardware Requirements

DSpace is written in Java, it will therefore run on any Operating System (Linux, Windows, Mac OSX). DSpace is built on top of free, open-source tools, such as the Apache Web server, the Tomcat Servlet engine, and the PostgreSQL relational database system. For your convenience, we package the necessary JDBC and other drivers and libraries together with DSpace. This set of tools should run on any UNIX-type OS, such as Linux, HP/UX, or Solaris, and you can substitute other libraries if you need to run on another platform. The system runs on anything from a laptop to a \$500K server, but there are a few general recommendations for hardware architectures. In a production setting where DSpace is actively used in public, DSpace requires a reasonably good server (see below) and a decent amount of memory and disk storage. For such production usage, following requirements are meant as a guideline:

Minimal System requirements

2-3 GB of Random-Access Memory (RAM)

1GB for Tomcat (e.g. "TOMCAT_OPTS=-server -Xms1024M -Xmx1024M -XX:MaxPermSize=128M -Dfile.encoding=UTF-8")

1GB for Database (PostgreSQL or Oracle).

Keep in mind your Operating System also needs some memory to function. So, while DSpace may only need ~2GB of memory, you should ensure the computer itself has at least 3-4GB of RAM available overall.

20 GB of Storage (or roughly enough storage for all the files you wish to store in DSpace)

This minimal system should be able to support DSpace sites of roughly 20,000 items or less. Though the exact number of items will depend on the amount of activity (searches, accesses, downloads, etc) within the DSpace site.

An empty installation of DSpace will effectively require less than 1GB of storage. The storage estimates are very rough. The actual amount of storage you will need depends on the size of the files you plan to store in DSpace. Files are not compressed in any way, so at a bare minimum you need enough space to store all of your files, plus some extra space for database storage and logfiles. You also will need to be prepared to add additional storage space as you add more content to DSpace.

Approximate cost: around \$599. (roughly verified 12/05/2012 through Dell - basic R210II rack server).

Mid-range DSpace Production system

4 GB of Random Access Memory (RAM)

~2GB for Tomcat (e.g. "TOMCAT_OPTS=-server -Xms2048M -Xmx2048M -XX:MaxPermSize=128M -Dfile.encoding=UTF-8")

~ 2GB for Database (PostgreSQL or Oracle).

Keep in mind your Operating System also needs some memory to function. So, while a mid-range DSpace may only need ~4GB of memory, you should ensure the computer itself has at least 5-6GB of RAM available overall.

200 GB of Storage (or roughly enough storage for all the files you wish to store in DSpace)
This mid-range system may be necessary for DSpace sites which either have a larger number of items (roughly 50,000 or more) or a larger amount of activity (searches, accesses, downloads, etc) within the system.

Again the storage estimates are very rough. The actual amount of storage you will need depends on the size of the files you plan to store in DSpace. Files are not compressed in any way, so at a bare minimum you need enough space to store all of your files, plus some extra space for database storage and logfiles. You also will need to be prepared to add additional storage space as you add more content to DSpace.

High End DSpace Production system requirements:

Any modern processor / CPU. (During normal function, DSpace is not very CPU heavy. However, some backend tasks which are scheduled via "cron" do require CPU. As your amount of content increases, you may need a higher end CPU.)

8GB of Random Access Memory (RAM)

~ 4-6GB for Tomcat

~ 2-4GB for Database (PostgreSQL or Oracle)

Keep in mind your Operating System also needs some memory to function. So, while a mid-range DSpace may only need ~8GB of memory, you should ensure the computer itself has at least 9-10GB of RAM available overall.

1TB of Storage (or roughly enough storage for all the files you wish to store in DSpace)

Storage examples:

73 GB 15,000 rpm network disks in RAID accessible over a gigabit connection for storing the database and indexes

7,400 rpm network disks in RAID accessible over a gigabit connection for storing the data whose size can be easily expanded.

INSTALLATION OF DSPACE 6.3 ON UBUNTU 20.04 LTS

Installation Of Prerequisite Applications

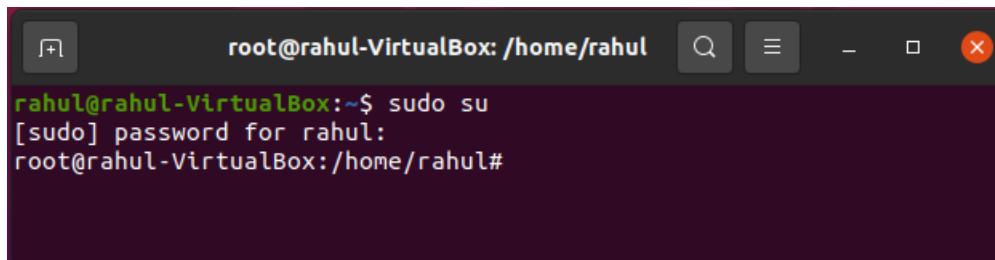
- 1) Java Development Kit (JDK)
- 2) PostgreSQL Database
- 3) DSpace Software
- 4) Apache Ant (Pure Java Build Tool)
- 5) Apache Maven (Apache Build Automation Tool for Java Projects)
- 6) Apache Tomcat (Web Server for hosting Dspace)

Open Applications > Accessories > Terminal and execute the following commands.

1. Log In As Root

```
sudo su
```

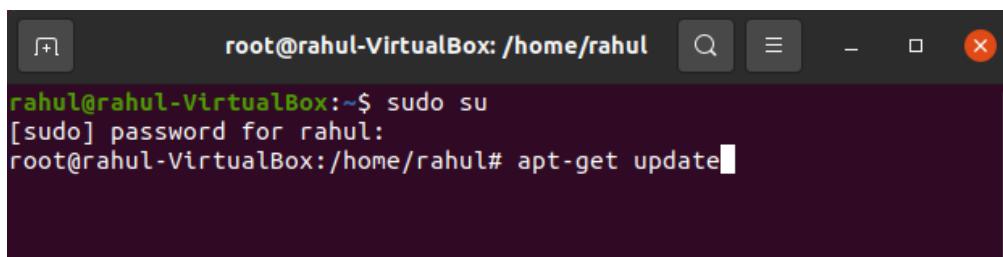
Enter password.....



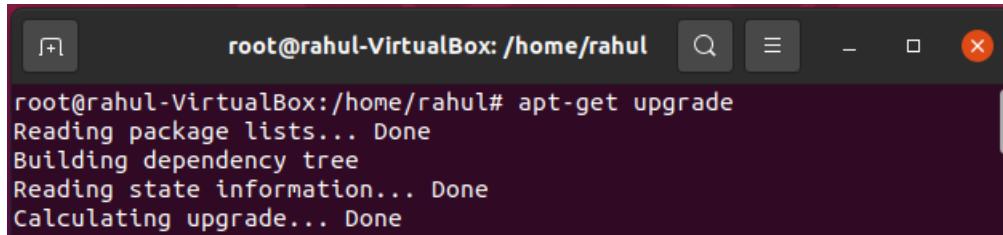
```
root@rahul-VirtualBox:~$ sudo su
[sudo] password for rahul:
root@rahul-VirtualBox:/home/rahul#
```

Update the Ubuntu : `apt-get update`

Upgrade the Ubuntu : `apt-get upgrade`



```
root@rahul-VirtualBox:~$ sudo su
[sudo] password for rahul:
root@rahul-VirtualBox:/home/rahul# apt-get update
```



```
root@rahul-VirtualBox:/home/rahul# apt-get upgrade
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
```

Install OpenJDK 8 : apt-get install openjdk-8-jdk

Apache Maven 3.x (Java build tool) and Apache ant : apt-get install ant maven

Relational Database (PostgreSQL) : apt-get install postgresql

2. Create Dspace user

```
useradd -m dspace
```

```
passwd dspace [enter a password for the new user dspace]
```

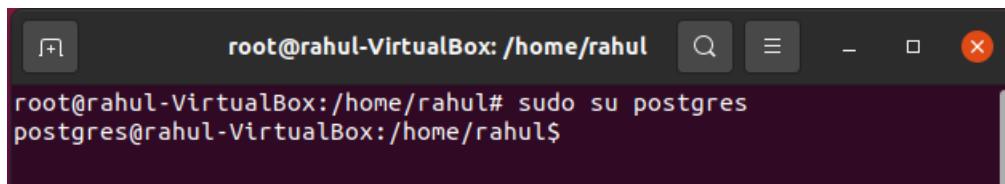
```
mkdir /dspace
```

```
chown dspace /dspace
```

3. Configure Postgresql and create database

- Create the PostgreSQL "dspace" user

Log in to postgresql:



```
root@rahul-VirtualBox: /home/rahul
root@rahul-VirtualBox:/home/rahul# sudo su postgres
postgres@rahul-VirtualBox:/home/rahul$
```

```
sudo su postgres
```

Next, we will create a database called “dspace” and database user called “dspace” with password “dspace”. Don’t confuse database user with normal user. Both are different.

```
createuser -U postgres -d -A -P dspace
```

Enter password for new role: #Enter password for the user dsapce

Enter it again: #Re-enter password

If asked the following:

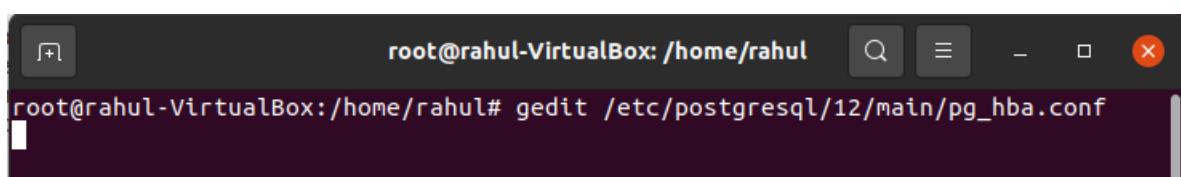
Shall the new role be allowed to create more new roles? (y/n) y

Answer "y" for yes.

Than type exit and come to root

Open up the /etc/postgresql/12/main/pg_hba.conf file:

```
gedit /etc/postgresql/12/main/pg_hba.conf
```



```
root@rahul-VirtualBox: /home/rahul
root@rahul-VirtualBox:/home/rahul# gedit /etc/postgresql/12/main/pg_hba.conf
```

Add the following line shown in red color at last of the file.

```
local all dspace md5
```



```
*pg_hba.conf  
/etc/postgresql/12/main  
Save Plain Text Tab Width: 8 Ln 104, Col 1 INS  
102 host replication all 127.0.0.1/32 md5  
103 host replication all ::1/128 md5  
104 local all postgres md5
```

Type the following to restart:

```
/etc/init.d/postgresql restart
```

4. Create The Postgresql “Dspace” Database

Login as Dspace:

```
sudo su dspace
```

```
createdb -U dspace -E UNICODE dspace
```

Than type exit and come to root

```
sudo su postgres
```

Now type the following command to create extension pgcrypto

```
PSQL --USERNAME=POSTGRES DSPACE -C "CREATE EXTENSION PGCRYPTO;"
```

Type the following to restart postgres:

```
/ETC/INIT.D/POSTGRESQL RESTART
```

NOTE: while deleting or creating the database log in to the concern user, like for dspace user (sudo su dspace) than apply the commands

```
exit
```

Go To Root

5. CREATE DSPACE DIRECTORY

```
mkdir /build
```

```
chmod -R 777 /build
```

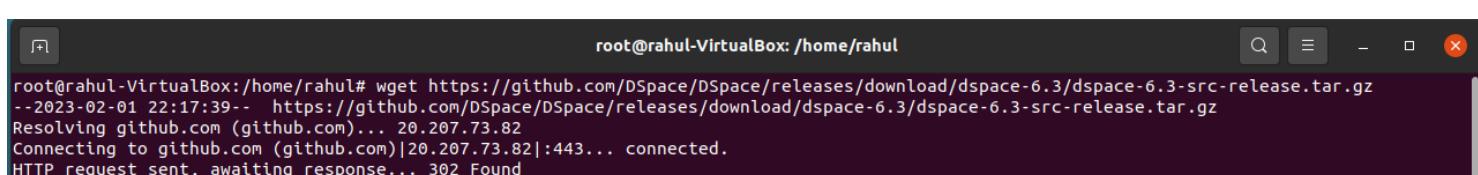
```
cd /build
```

6. Download Dspace to/build directory

You can check latest version of Dspace from here.

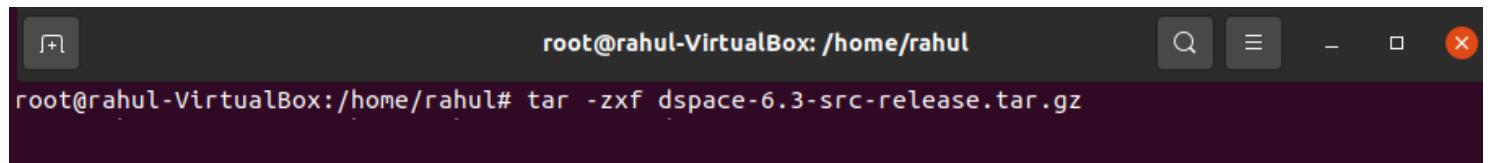
Run the command mentioned below at command prompt. (Ensure that Internet is working).

```
wget https://github.com/DSpace/DSpace/releases/download/dspace-6.3/dspace-6.3-src-release.tar.gz
```



```
root@rahul-VirtualBox: /home/rahul# wget https://github.com/DSpace/DSpace/releases/download/dspace-6.3/dspace-6.3-src-release.tar.gz  
--2023-02-01 22:17:39-- https://github.com/DSpace/DSpace/releases/download/dspace-6.3/dspace-6.3-src-release.tar.gz  
Resolving github.com (github.com)... 20.207.73.82  
Connecting to github.com (github.com)|20.207.73.82|:443... connected.  
HTTP request sent, awaiting response... 302 Found
```

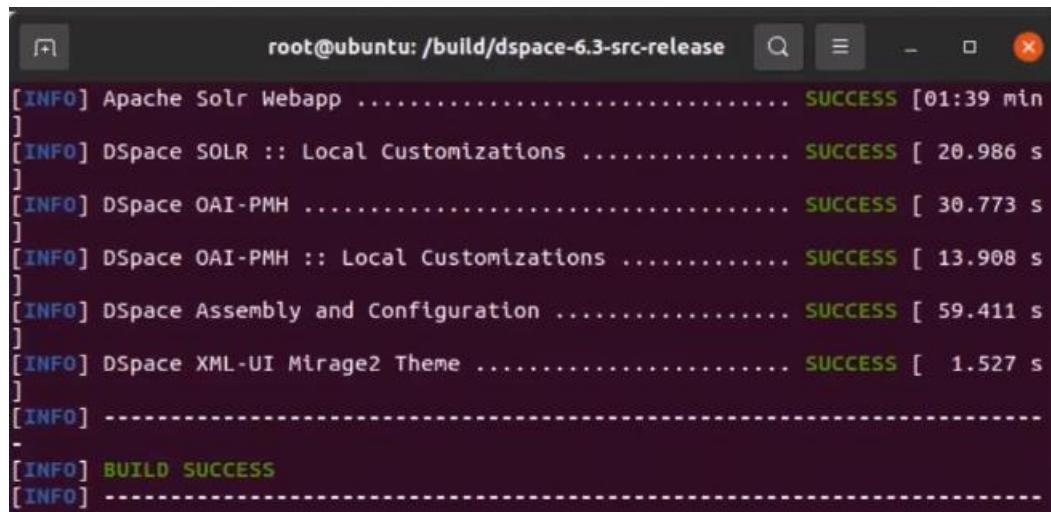
```
tar -zxf dspace-6.3-src-release.tar.gz
```



```
root@rahul-VirtualBox: /home/rahul# tar -zxf dspace-6.3-src-release.tar.gz
```

```
cd /build/dspace-6.3-src-release
```

```
mvn -fn package
```



```
[INFO] Apache Solr Webapp ..... SUCCESS [01:39 min]
[INFO] DSpace SOLR :: Local Customizations ..... SUCCESS [ 20.986 s]
[INFO] DSpace OAI-PMH ..... SUCCESS [ 30.773 s]
[INFO] DSpace OAI-PMH :: Local Customizations ..... SUCCESS [ 13.908 s]
[INFO] DSpace Assembly and Configuration ..... SUCCESS [ 59.411 s]
[INFO] DSpace XML-UI Mirage2 Theme ..... SUCCESS [ 1.527 s]
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
```

(Please note in case of build failure delete the following lines from /build/dspace-6.0-src-release/dspace-api/pom.xml its due to some known Bug)

```
<plugin>
```

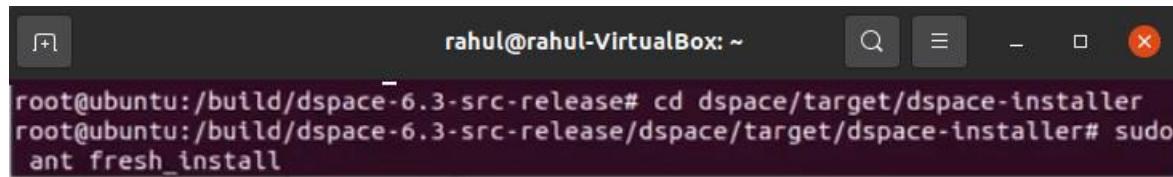
```
  <groupId>org.codehaus.mojo</groupId>
  <artifactId>buildnumber-maven-plugin</artifactId>
  <version>1.4</version>
  <executions>
    <execution>
      <phase>validate</phase>
      <goals>
        <goal>create</goal>
      </goals>
    </execution>
  </executions>
</plugin>
```



```
pom.xml
/build/dspace-6.3-src-release/dspace-api
Save
Open + pom.xml
89     <plugin>
90         <groupId>org.codehaus.mojo</groupId>
91         <artifactId>build-helper-maven-plugin</artifactId>
92         <version>1.9.1</version>
93         <executions>
94             <execution>
95                 <phase>validate</phase>
96                 <goals>
97                     <goal>maven-version</goal>
98                 </goals>
99             </execution>
100        </executions>
101    </plugin>
102
103    <plugin>
104        <groupId>org.codehaus.mojo</groupId>
105        <artifactId>buildnumber-maven-plugin</artifactId>
106        <version>1.4</version>
107        <executions>
```

```
cd dspace/target/dspace-installer
```

```
ant fresh_install
```



```
rahul@rahul-VirtualBox: ~
root@ubuntu:/build/dspace-6.3-src-release# cd dspace/target/dspace-installer
root@ubuntu:/build/dspace-6.3-src-release/dspace/target/dspace-installer# sudo
ant fresh_install
```

7. Installation of Tomcat

Download the and extract the Tomcat package,

```
cd /opt
```

```
sudo wget http://apachemirror.wuchna.com/tomcat/tomcat-9/v9.0.37/bin/apache-tomcat-9.0.37.tar.gz
```

Or you can visit the Tomcat website and download the latest package.

8. EXTRACT TOMCAT PACKAGE

```
sudo tar xvzf apache-tomcat-9.0.37.tar.gz
```

9. Rename folder "apache-tomcat-9.0.37" to "tomcat" and Delete the Tomcat archive file from /opt folder

```
sudo mv apache-tomcat-9.0.37 tomcat
```

```
sudo rm apache-tomcat-9.0.37.tar.gz
```

10. Configure Tomcat

```
sudo gedit /etc/profile
```

Setup environment variables

Environment variables to find JAVA.

Add following lines at the bottom of the file.

```
export JAVA_HOME=/usr/lib/jvm/java-8-openjdk-amd64
```

```
export CATALINA_HOME=/opt/tomcat
```

Copy Dspace web apps files to Tomcat folder

```
sudo cp -r /dspace/webapps/* /opt/tomcat/webapps
```

Running Tomcat automatically

You can set up to start the Tomcat server start automatically at the time of system turn on.

Open the following file in a Terminal,

```
sudo gedit /etc/init.d/tomcat
```

Add following lines in the file,

```
#!/bin/bash  
#### BEGIN INIT INFO  
# Provides:      tomcat8  
# Required-Start: $network  
# Required-Stop:  $network  
# Default-Start: 2 3 4 5  
# Default-Stop:  0 1 6  
# Short-Description: Start/Stop Tomcat server  
#### END INIT INFO
```

```

PATH=/sbin:/bin:/usr/sbin:/usr/bin

start() {
    sh /opt/tomcat/bin/startup.sh
}

stop() {
    sh /opt/tomcat/bin/shutdown.sh
}

case $1 in
    start|stop) $1;;
    restart) stop; start;;
    *) echo "Run as $0 <start|stop|restart>"; exit 1;;
esac

```

=> Save and Close the file.



```

1#!/bin/bash
2### BEGIN INIT INFO
3# Provides:          tomcat8
4# Required-Start:    $network
5# Required-Stop:     $network
6# Default-Start:    2 3 4 5
7# Default-Stop:     0 1 6
8# Short-Description: Start/Stop Tomcat server
9### END INIT INFO
10
11PATH=/sbin:/bin:/usr/sbin:/usr/bin
12
13start() {
14    sh /opt/tomcat/bin/startup.sh
15}
16
17stop() {
18    sh /opt/tomcat/bin/shutdown.sh
19}
20
21case $1 in
22    start|stop) $1;;
23    restart) stop; start;;
24    *) echo "Run as $0 <start|stop|restart>"; exit 1;;
25esac

```

Apply the following commands too:

```
sudo chmod +x /etc/init.d/tomcat
```

```
sudo update-rc.d tomcat defaults
```

Restart Tomcat server and PostgreSQL database

- sudo service tomcat start
- sudo service tomcat stop
- sudo service tomcat restart

```
sudo /etc/init.d/postgresql restart
```

```
sudo /etc/init.d/tomcat restart
```

11. Make an initial administrator account (an e-person) in DSpace:

Apply following command in a terminal,

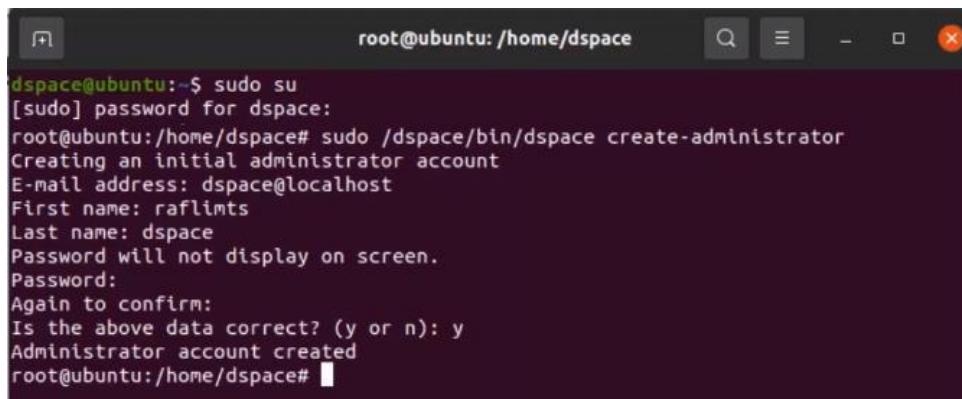
```
sudo /dspace/bin/dspace create-administrator
```

It will ask to enter the email address for the user login.

Enter an email address (e.g. dspace@localhost).

Enter First name and surname (e.g. dspace)

Enter a password.

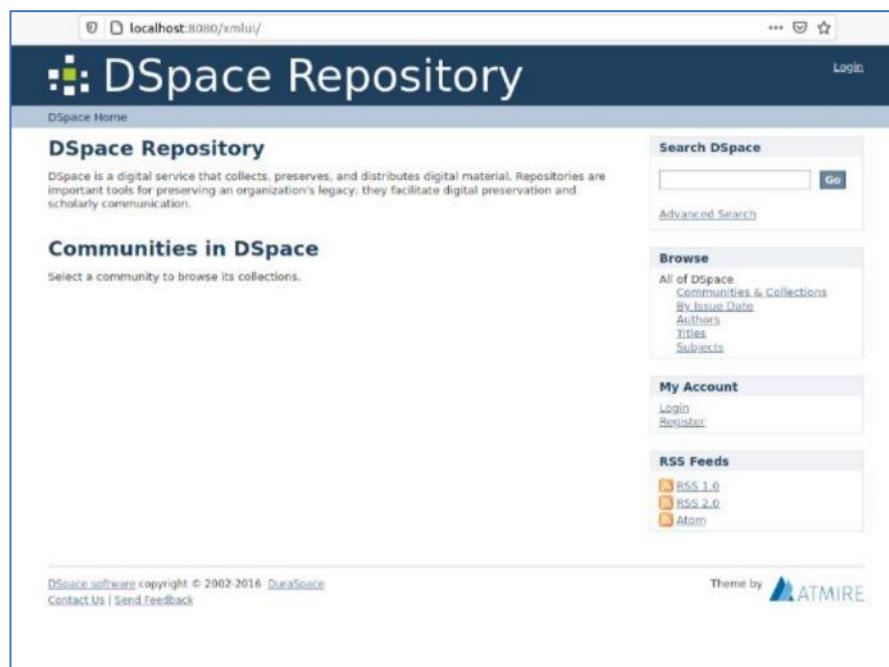


```
root@ubuntu:/home/dspace
[sudo] password for dspace:
root@ubuntu:/home/dspace# sudo /dspace/bin/dspace create-administrator
Creating an initial administrator account
E-mail address: dspace@localhost
First name: raflimts
Last name: dspace
Password will not display on screen.
Password:
Again to confirm:
Is the above data correct? (y or n): y
Administrator account created
root@ubuntu:/home/dspace#
```

Open DSpace in your browser:

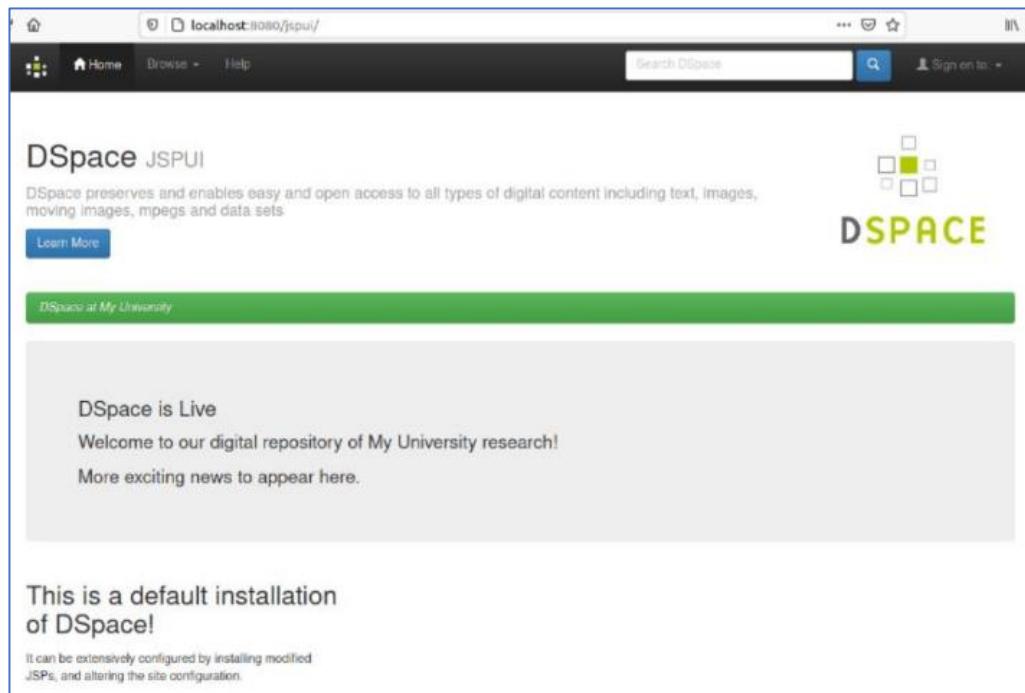
DSpace has two interfaces; xmlui and jspui. You can load either one Dspace interface in a browser.

XMLUI: <http://localhost:8080/xmlui>



The screenshot shows the DSpace Repository XMLUI homepage. The URL in the browser is localhost:8080/xmlui/. The page features a dark blue header with the DSpace logo and the text "DSpace Repository". Below the header, there's a "DSpace Home" link. The main content area is divided into several sections: "Search DSpace" with a search bar and "Advanced Search" link; "Browse" with links for "All of Dspace", "Communities & Collections", "By Issue Date", "Authors", "Titles", and "Subjects"; "My Account" with "Login" and "Register" buttons; and "RSS Feeds" with links for "RSS 1.0", "RSS 2.0", and "Atom". At the bottom, there's a footer with copyright information: "DSpace software copyright © 2002-2016 DuraSpace", "Contact Us | Send Feedback", and "Theme by ATMIRE".

JSPUI: <http://localhost:8080/jspui/>



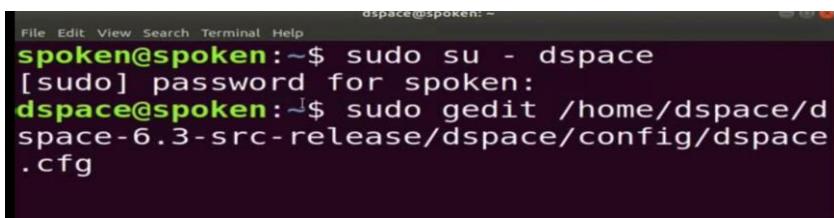
The screenshot shows the DSpace JSPUI homepage. At the top, there is a header bar with a logo, a search bar labeled "Search DSpace", and a "Sign on to:" dropdown. Below the header, the main content area features the DSpace logo (a grid of squares) and the text "DSpace preserves and enables easy and open access to all types of digital content including text, images, moving images, mpegs and data sets". A "Learn More" button is present. A green banner below the logo reads "DSpace at My University". The central content area contains a section titled "DSpace is Live" with the text "Welcome to our digital repository of My University research! More exciting news to appear here." At the bottom left, a note states "This is a default installation of DSpace!" and "It can be extensively configured by installing modified JSPs, and altering the site configuration."

CREATING ACCOUNT AND E-PERSON IN DSPACE

1). EMAIL CONFIGURATION AND SMTP SERVICES:

- 1) Email verification during registration
- 2) Notification emails during Item submission and review
- 3) Get Dspace user's feedback
- 4) Notification to Community and Collection Subscriber
- 5) DSpace requires SMTP service to send and receive emails.
- 6) SMTP services like Gmail, SendinBlue, SendGrid, PepiPost, Amazon SES or Mandrill can be used.
- 7) Custom SMTP services can be set up and used

Step 1: Get into admin mode



```
File Edit View Search Terminal Help  
spoken@spoken:~$ sudo su - dspace  
[sudo] password for spoken:  
dspace@spoken:~$ sudo gedit /home/dspace/dspace-6.3-src-release/dspace/config/dspace.cfg
```

Step 2: Set username as admin mail and password



```
Open ▾ dspace.cfg Save ▾  
##### Email settings #####  
  
# SMTP mail server (allows DSpace to send  
# email notifications)  
mail.server = smtp.example.com  
  
# SMTP mail server authentication username  
# and password (if required)  
mail.server.username =  
mail.server.password =  
  
# SMTP mail server alternate port (defaults  
# to 25)  
mail.server.port = 25  
  
##### Email settings #####  
  
# SMTP mail server (allows DSpace to send  
# email notifications)  
mail.server = smtp.gmail.com  
  
# SMTP mail server authentication username  
# and password (if required)  
mail.server.username = dspace.ul@gmail.com  
mail.server.password = XXXXXXXXXX  
  
# SMTP mail server alternate port (defaults  
# to 25)  
mail.server.port = 25
```

Step 3: Setup SMTP services.

```
# the key and the value. For example:  
mail.extraproperties =  
mail.smtp.socketFactory.port=465, \  
mail.smtp.socketFactory.class=javax.net.ssl.S  
\  
mail.smtp.socketFactory.fallback=false  
  
# An option is added to disable the  
mailserver. By default, this property is  
set to false  
# By setting mail.server.disabled = true,  
DSpace will not send out emails.
```

Step 4: Rebuild DSpace

Rebuilding includes

- Compilation of source code
- Installation of Webapp
- Deployment of DSpace on Tomcat Server

```
dspace@spoken: ~
File Edit View Search Terminal Help
dspace@spoken:~$ sudo gedit $HOME/Rebuild-
DSpace
```

Step 4 (i): Stop Tomcat8 service and rebuild – DSpace

```
Open ▾ A Save
dspace@spoken: ~
sudo service tomcat8 stop
sleep 5
cd /home/dspace/dspace-6.3-src-release
mvn -U clean package
cd /home/dspace/dspace-6.3-src-release/
dspace/target/dspace-installer
ant update
sleep 5
sudo service tomcat8 start

Rebuild – DSpace.
dspace@spoken: ~
File Edit View Search Terminal Help
dspace@spoken:~$ sudo chmod 777 $HOME/Rebu
ild-DSpace
dspace@spoken:~$ $HOME/Rebuild-DSpace

File Edit View Search Terminal Help
dspace@spoken: ~
/home/dspace/dspace-install/solr/oai/data/
index/ ls >= Solr 4.10.2
[echo] The Solr index in /home/dspace
/dspace-install/solr/oai/data/index/ IS >=
Solr 4.10.2. Looks good!
[echo] Cleanup any downloaded lucene-
core-*.jar files. We don't need them anymo
re.

update:

BUILD SUCCESSFUL
Total time: 49 seconds
```

Step 4 (ii): Open the link www.google.com/setting/lesssecureapps. And change the setting of Less secure app access from Off to ON

Step 5: Verify Email Configuration. (Email Verify Successful)

```
dspace@spoken: ~
File Edit View Search Terminal Help
dspace@spoken:~$ sudo $HOME/dspace-install
/bin/dspace test-email

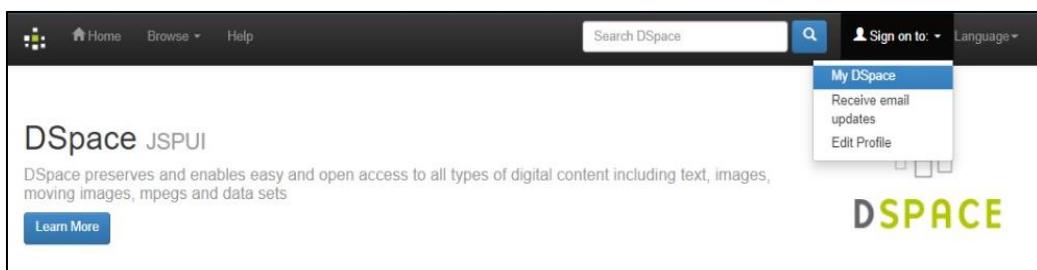
About to send test email:
- To: dspace.ul@gmail.com
- Subject: DSpace test email
- Server: smtp.gmail.com

Email sent successfully!

dspace@spoken:~$
```

2). USER'S REGISTRATION

Step 1: Open browser and type localhost:8080



Step2: Enter **email** address and **password**. Then click on Login.

Step 3: Registration E-mail Sent check your Email Box for **DSpace Registration Email**.

Step 4: Fill Registration information. Enter all your details such as **Name**, **Telephone**, **Language**, etc.

Registration Information

Please enter the following information. The fields marked with a * are required.

First name*:

Last name*:

Contact telephone:

Language: English

Please choose a password and enter it into the box below, and confirm it by typing it again into the second box. It should be at least six characters long.

Password:

Again to Confirm:

Step 5: Registration is completed now. (**Registration Completed Successfully!**)

DSpace at My University

Registration Complete

Thank you Muskan,

You're now registered to use the DSpace system. You can subscribe to collections to receive e-mail updates about new items.

[Return to DSpace Home](#)

Note: If you want to update Profile. You can do it by following Steps.

1. **Login To DSpace** (By entering Email ID and Password)

E-mail Address:

Password:

2. **Click on Logged in Icon. Then select **Edit Profile**.**



3. **Make changes to profile.** Then select **Update Profile**. Profile Updated Successfully.

Edit Your Profile ?

Please enter or amend the following information. The fields marked with a * are required.

First name*: Muskan Jain

Last name*: 108

Contact telephone:

Language: English

Optionally, you can choose a new password and enter it into the box below, and confirm it by typing it again into the second box for verification. It should be at least six characters long.

New Password:

Again to Confirm:

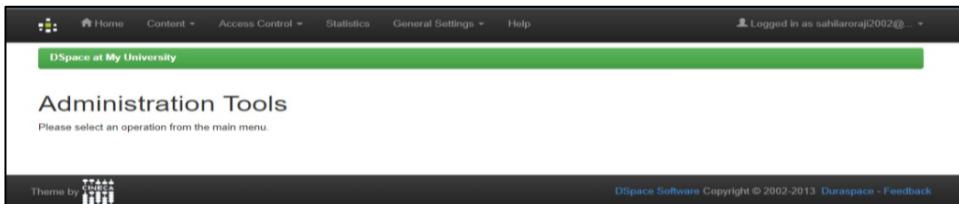
Profile Updated

Thank you, your profile information has been updated.

[Return to DSpace Home](#)

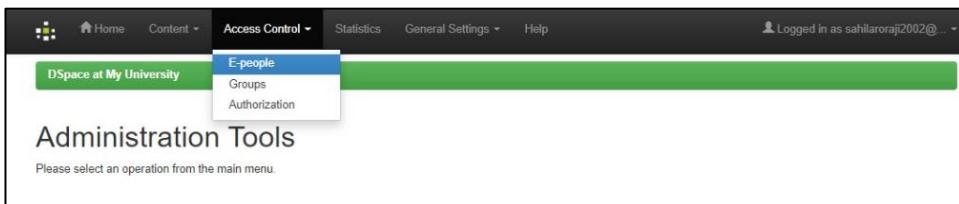
3). CREATING E – PERSON

Step 1: Login in Dspace as Administrator.



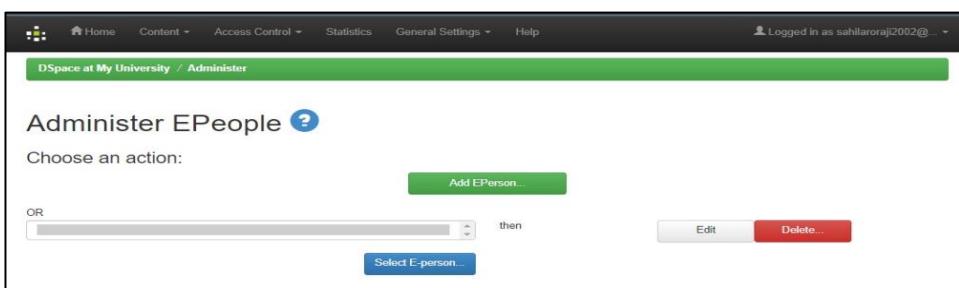
The screenshot shows the DSpace Administration Tools interface. At the top, there's a navigation bar with links for Home, Content, Access Control, Statistics, General Settings, and Help. A user is logged in as sahilaroraji2002@... . Below the navigation is a green header bar with the text "DSpace at My University". The main content area is titled "Administration Tools" and contains the message "Please select an operation from the main menu.". At the bottom, there's a footer bar with the text "DSpace Software Copyright © 2002-2013 Durianspace - Feedback".

Step 2: Go to Access Control and select E-people from drop down list.



This screenshot is similar to the previous one, but the "Access Control" link in the top navigation bar is highlighted, and a dropdown menu has appeared below it. The menu items are "E-people", "Groups", and "Authorization". The rest of the interface is identical to the first screenshot.

Step 3: On Page Administer E-people page choose AddEperson.



The screenshot shows the "Administer EPeople" page. The top navigation bar includes "Home", "Content", "Access Control", "Statistics", "General Settings", and "Help". The user is logged in as sahilaroraji2002@... . The main content area is titled "Administer EPeople" and contains the message "Choose an action:". Below this, there are two buttons: "Add EPerson..." (in green) and "Select E-person..." (in blue). There are also "Edit" and "Delete..." buttons. The URL in the browser address bar is "DSpace at My University / Administer".

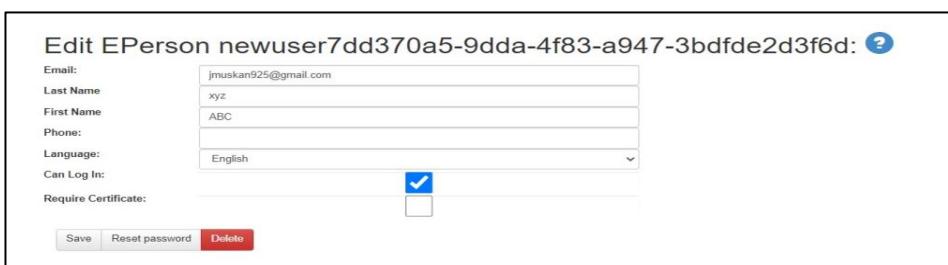
Step 4: By default, some text is filled in **Email section** remove that and fill your email and Other details such as First Name, Last Name, Phone, Language, etc.



The screenshot shows the "Edit EPerson" page for a user with ID newuser7dd370a5-9dda-4f83-a947-3bdfde2d3f6d. The form fields are as follows:

Email:	newuser7dd370a5-9dda-4f83-a947-3bdfde2d3f6d
Last Name:	
First Name:	
Phone:	
Language:	English
Can Log In:	<input type="checkbox"/>
Require Certificate:	<input type="checkbox"/>

At the bottom, there are "Save", "Reset password", and "Delete" buttons.



The screenshot shows the same "Edit EPerson" page after changes have been made. The updated values are:

Email:	jmuskan925@gmail.com
Last Name:	xyz
First Name:	ABC
Phone:	
Language:	English
Can Log In:	<input checked="" type="checkbox"/>
Require Certificate:	<input type="checkbox"/>

At the bottom, there are "Save", "Reset password", and "Delete" buttons.

Step 5: Click on Save.

Step 6: Eperson account is created Successfully

4). CHANGING PASSWORD IN DSPACE

Step 1: Login in DSpace as Administrator.

E-mail Address:

Password:

Log In

Step 2: Select Eperson and click on edit. Click on reset password.

DSpace at My University / Administer

Administer EPeople ?

Choose an action:

An email message has been sent to the user containing a token that may be used to choose a new password.

Add EPerson... Edit Delete...

OR Selected E-person...

Step 3: Password Change email send to User.

Change Password Request Inbox

sahilaroraji2002@gmail.com 18:22 (6 minutes ago)

to me Star Print

To change the password for your DSpace account, please click the link below:

<http://localhost:8080/xmlui/forgot?token=65cac58138d56b2424a3cf7b8faa25b3>

If you need assistance with your account, please email dspace-help@myu.edu or call us at xxx-555-xxxx.

The DSpace Team

Step 4: Click on Link to change Password. Enter new Password and Confirm Password. Then click on Set New Password.

DSpace at My University

Enter New Password

Hello ABC xyz.

Please enter a new password into the box below, and confirm it by typing it again into the second box. It should be at least six characters long.

New Password:

Again to Confirm:

Set New Password

Step 5: Password Changed Successfully.

DSpace at My University

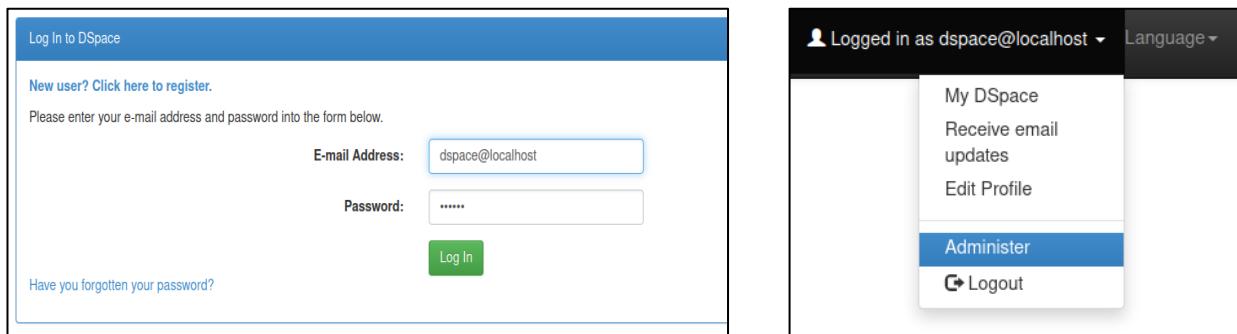
Password Changed

Thank you, your new password has been set and is active immediately.

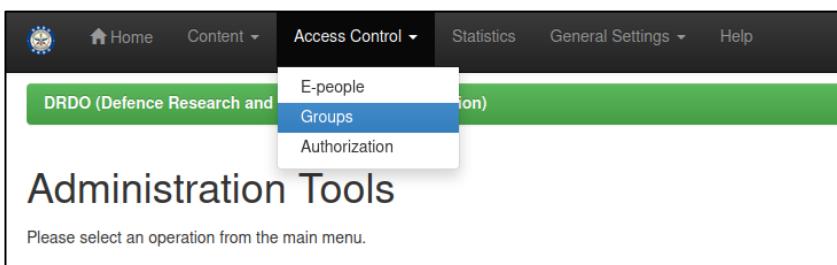
[Go to DSpace Home](#)

5). CREATING GROUP IN DSPACE

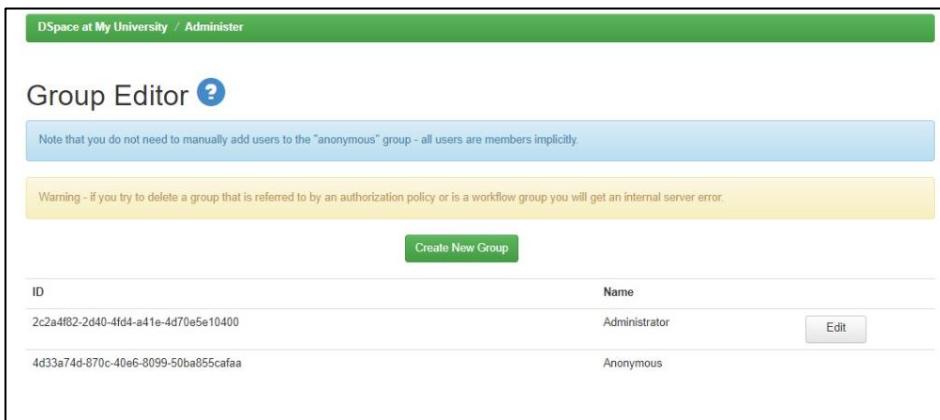
Step 1: Login as administrator. Then select **Administer**.



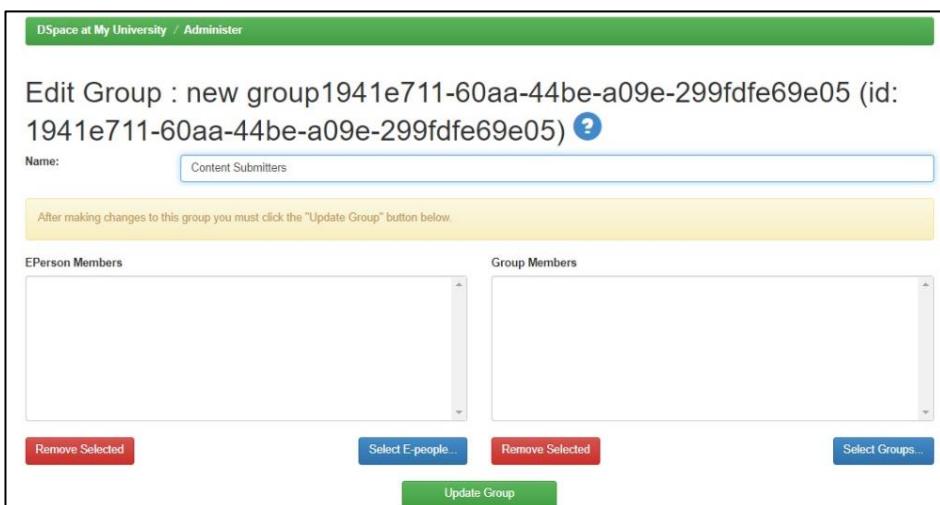
Step 2: Click on **Access Control Tab**. Then select **Groups**.



Step 3: Click on **Create New Group**.



Step 4: Click on **Select E-person** to add E-persons to the Group.



Step 5: Click on Add Button to add particular E-person.

The screenshot shows a table of E-people with columns: ID, E-mail, Last Name, First Name, and Language. Three rows are listed:

ID	E-mail	Last Name	First Name	Language
274247fe-a26c-4ed5-ae83-d5cc1e154d91	jmuskanjain001@gmail.com	108	Muskan Jain	en
cd71a388-fe26-47fd-ad36-225663330df3	sahilaraj12002@gmail.com	arora	sahil	en
7dd370a5-9dda-4f83-a947-3bdffe2d3f6d	jmuskan925@gmail.com	xyz	PQR	en

Each row has a green 'Add' button next to it. Below the table is a navigation bar with links: First, < 5 Pages, < 1 Page, 1 Page >, 5 Pages >, and Last. At the bottom right is a red 'Close' button.

Step 5: After selecting all E-persons click on Update Group.

The screenshot shows the 'Edit Group' page for a group with ID: 1941e711-60aa-44be-a09e-299fdfe69e05. The 'EPerson Members' section contains two names: 'PQR xyz (jmuskan925@gmail.com)' and 'Muskan Jain 108 (jmuskanjain001@gmail.com)'. Below this are buttons for 'Remove Selected', 'Select E-people...', 'Remove Selected', 'Select Groups...', and a green 'Update Group' button.

Step 6: Click on Create New Group Button.

The screenshot shows the 'Group Editor' page. It includes a note: 'Note that you do not need to manually add users to the "anonymous" group - all users are members implicitly.' and a warning: 'Warning - if you try to delete a group that is referred to by an authorization policy or is a workflow group you will get an internal server error.' Below these are two buttons: 'Create New Group' (green) and 'Edit' (grey). The main table lists groups with their IDs and names:

ID	Name	Action
2c2a4f82-2d40-4fd4-a41e-4d70e5e10400	Administrator	Edit
4d33a74d-870c-40e6-8099-50ba855cafaf	Anonymous	
1941e711-60aa-44be-a09e-299fdfe69e05	Content Submitters	Edit Delete

Step 7: Group created successfully.

ABOUT E-PERSON IN DSPACE

By default, all the users registered in DSpace will be assigned to the role of E-Person:

- Can view items which are published publicly
- Can upload items in the authorised collection.
- Can be assigned some other roles e.g., Administrator, Community Administrator, Collection Administrator, Submitter, Reviewer.

Anonymous User

- Can view items which are published publicly
- Don't have any authority in DSpace

DSpace Administrator can manage all the Eperson Users.

In DSpace, by default, all users who register are assigned the role of E-Person, which allows them to view items that are published publicly and upload items to authorized collections. However, users can also be assigned other roles with different permissions and responsibilities, depending on their needs and the requirements of the repository.

Additional roles that can be assigned to users in DSpace:

Administrator: The Administrator role is the highest level of authority in DSpace and has full control over the entire repository. Administrators can perform a wide range of actions, such as creating and managing communities, collections, and items, configuring the repository's settings, and assigning roles and permissions to users.

Community Administrator: Community Administrators are responsible for managing a specific community within the repository. They can create and manage collections, items, and sub-communities within their community, and assign roles and permissions to users within their community.

Collection Administrator: Collection Administrators are responsible for managing a specific collection within the repository. They can upload and manage items in their collection, assign roles and permissions to users within their collection, and set access restrictions and embargoes on items.

Submitter: Submitters are users who can upload items to the repository, but they do not have any other administrative or managerial responsibilities. They can upload items to authorized collections and provide metadata for those items.

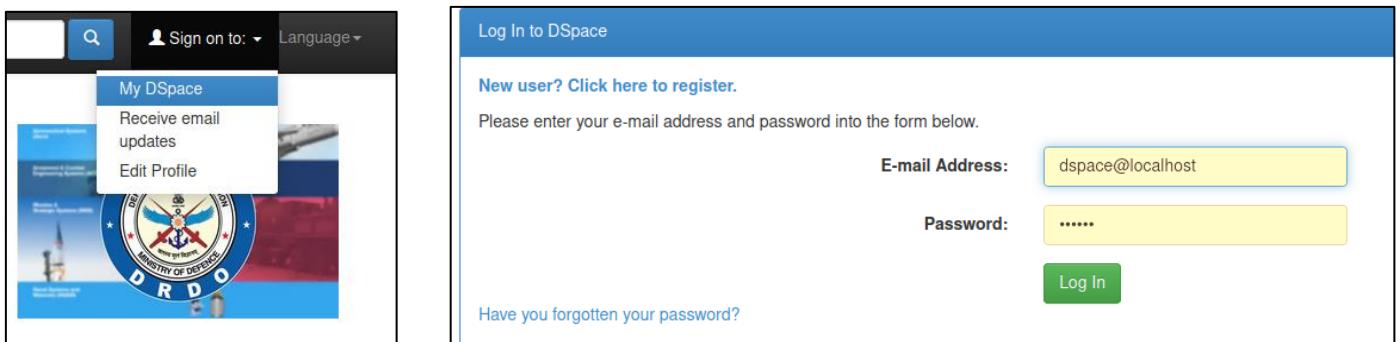
Reviewer: Reviewers are users who can review and approve or reject items that have been submitted to the repository. They can also provide feedback to submitters and help to ensure the quality and accuracy of the items in the repository.

The ability to assign different roles and permissions to users in DSpace allows institutions to manage and customize their repository to meet their specific needs and requirements. By assigning appropriate roles and permissions to users, institutions can ensure the security, integrity, and usability of their digital content.

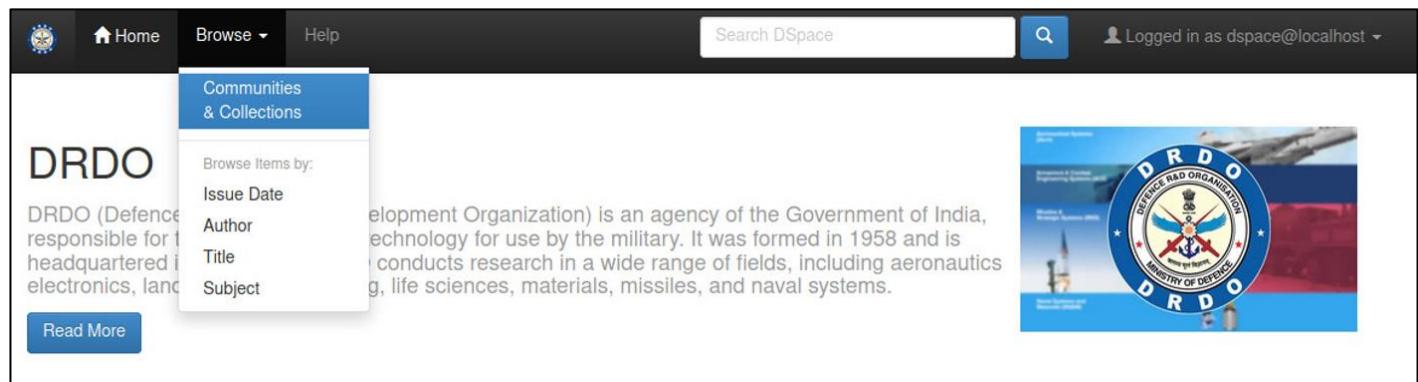
SUBMITTING CONTENT TO DSPACE

1). CREATING COMMUNITY

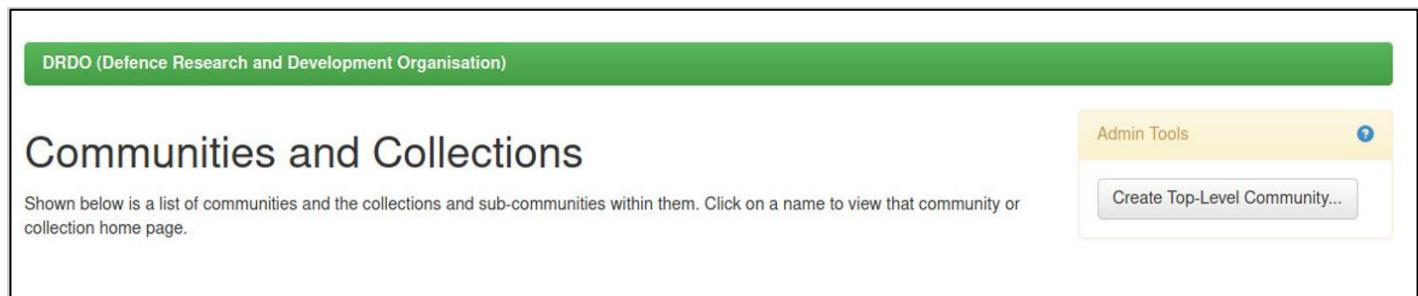
Step 1: Login to DSpace by Click on **Sign on to**. Dropdown. Select **My Dspace**. Enter **E-mail** Address and **Password** to Login.



Step 2: Select **Browse**> Dropdown then Click on **Communities & Collections**.



Step 3: Click on Create **Top-Level Community**.



Step 4: Enter all the details of Community. Such as Name of Community, Short Description of Community, Introduction text(HTML), Side Bar text (HTML), Logo of Community.

Create Community ?

Community's metadata

Name:

Short Description

Introductory text (HTML):

Side bar text (HTML):

Logo:

Upload a logo...

CreateCancel**Step 5:** Upload Logo:

Home Content Access Control Statistics General Settings Help Logged in as dspace@localhost

DRDO (Defence Research and Development Organisation) / Administer

Delete this Community...

Edit Community 123456789/13 ?

Community's metadata

Name:

Short Description

Introductory text (HTML):

Copyright text (plain text):

Side bar text (HTML):

Logo:  Upload new logo... Delete (no logo)

Community's settings

Community Administrators:	Create
Community's Authorizations:	Edit...
Community's Curations:	Curate...

Update Cancel

Step 6: Community Created Successfully.

Communities and Collections

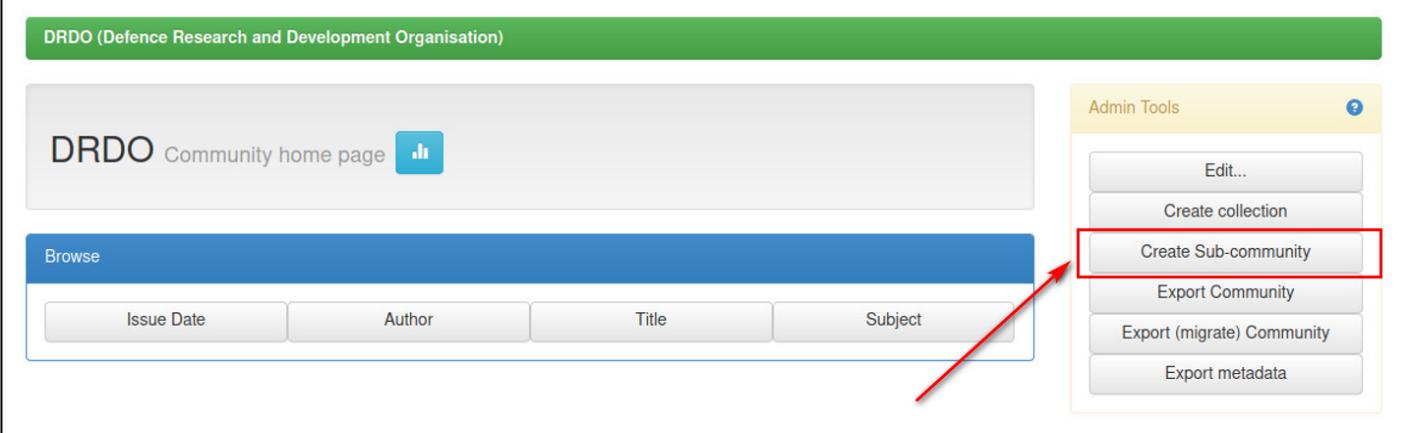
Shown below is a list of communities and the collections and sub-communities within them. Click on a name to view that community or collection home page.

DRDO Community
The Defence Research and Development Organisation is the premier agency under the Department of Defence Research



2). CREATING SUB-COMMUNITY

Step 1: Click on Create Sub-community.



DRDO (Defence Research and Development Organisation)

DRDO Community home page

Browse

Issue Date Author Title Subject

Admin Tools

- Edit...
- Create collection
- Create Sub-community**
- Export Community
- Export (migrate) Community
- Export metadata

Step 2: Enter all the details of the community and Click on Create. Creating a Sub-community is very much similar to creating a Community in Dspace. Both have same type of details such as: **Name** of Community, **Short Description** of Community, **Introduction text (HTML)**, **Side Bar text (HTML)**, **Logo** of Community.

Step 3: Sub-community Created Successful.

Communities and Collections

Shown below is a list of communities and the collections and sub-communities within them. Click on a name to view that community or collection home page.

DRDO
Top Level Community - DRDO

DESIDOC
DESIDOC Lab

3). CREATING COLLECTION IN DSPACE

Step 1: Click on Create Collection.

The screenshot shows the DESIDOC Community home page. At the top, there's a green header bar with the text "DRDO (Defence Research and Development Organisation) / DRDO". Below it is the main content area with a blue header "Browse" and search fields for "Issue Date", "Author", "Title", and "Subject". To the right is an "Admin Tools" sidebar with several options: "Edit...", "Create collection" (which has a red box around it), "Create Sub-community", "Export Community", "Export (migrate) Community", and "Export metadata". A red arrow points from the text in Step 1 to the "Create collection" button in the sidebar.

Step 2: Check the Statements which you want to apply to your collection. Then click on **Next >**.

The screenshot shows the "Describe the Collection" step. At the top, it says "Please check the boxes next to the statements that apply to the collection." Below is a list of statements with checkboxes. Some are checked (e.g., "New items should be publicly readable") and others are not (e.g., "The submission workflow will include an accept/reject step"). At the bottom right is a blue "Next >" button.

<input checked="" type="checkbox"/>	New items should be publicly readable
<input checked="" type="checkbox"/>	Some users will be able to submit to this collection
<input type="checkbox"/>	The submission workflow will include an accept/reject step
<input type="checkbox"/>	The submission workflow will include an accept/reject/edit metadata step
<input type="checkbox"/>	The submission workflow will include an edit metadata step
<input type="checkbox"/>	This collection will have delegated collection administrators
<input type="checkbox"/>	New submissions will have some metadata already filled out with defaults

Step 3: Enter all the Details of the Collection. Such as: Name, Short Description, Introduction text, License, Logo of the Collection.

The screenshot shows the "Describe the Collection" step. It includes fields for "Name" (set to "DESIDOC"), "Short Description" (describing DESIDOC as a division of DRDO), "Introductory text" (describing DESIDOC's various verticals like Defence Science Library, Network Services, etc.), and a "License" field (left blank). The top navigation bar shows the user is logged in as "dspace@localhost".

License that submitters must grant. Leave this blank to use the default license.

License:

Plain text, any provenance information about this collection. Not shown on collection pages.

Provenance:

Choose a JPEG or GIF logo for the collection home page. Should be quite small.

Logo:

No file selected.

Next >

Step 4: Add E-Person to Community. Then click on **Next >** Button.

Authorization to Submit

Who has permission to submit new items to this collection?

You can change this later using the relevant sections of the DSpace admin UI.

Click on the 'Select E-people' button to choose e-people to add to the list.

dspace dspace (dspace@localhost)

Click on the 'Select Groups' button to choose groups to add to the list.

Remove Selected

Select E-people...

Remove Selected

Select Groups...

Next >

Step 5: Confirm all the Details.

Home Content Access Control Statistics General Settings Help Logged in as dspace@localhost

DRDO (Defence Research and Development Organisation) / Administer

Edit Collection 123456789/14 

Collection's Metadata

Name:	DESIDOC
Short Description:	The Defence Scientific Information & Documentation Centre is a division of the De
Introductory text (HTML):	DESIDOC has various verticals like Defence Science Library, Network Services, Digital Library & E-Services, Publications, Multimedia, Marketing and Printing. All these Divisions work in close coordination with each other in fulfilling the information requirements of DRDO scientists.
Copyright text (plain text):	
Side bar text (HTML):	
License:	
Provenance:	
Logo:	<input type="button" value="Upload a logo..."/>

Submission Workflow

Submitters:	<input type="button" value="Edit..."/> <input type="button" value="Delete"/>
Accept/Reject Step:	<input type="button" value="Create..."/>
Accept/Reject/Edit Metadata Step:	<input type="button" value="Create..."/>
Edit Metadata Step:	<input type="button" value="Create..."/>
Collection Administrators:	<input type="button" value="Create..."/>

Collection's settings

Item template:	<input type="button" value="Create..."/>
Collection's Authorizations:	<input type="button" value="Edit..."/>
Collection's Curations:	<input type="button" value="Curate..."/>

Harvesting Settings

Content Source	<input checked="" type="radio"/> This is a standard DSpace collection <input type="radio"/> This collection harvests its content from an external source
OAI Provider	<input type="text"/>
OAI Set Id	<input type="text"/>
Metadata Format	<input type="button"/>
Content being Harvested	<input checked="" type="radio"/> Harvest metadata only. <input type="radio"/> Harvest metadata and references to bitstreams (requires ORE support). <input type="radio"/> Harvest metadata and bitstreams (requires ORE support).

Last Harvest Result

Update **Cancel**

Step 6: Community Created Successfully!

4). SUBMITTING CONTENT TO COLLECTION

Step 1: Login to DSpace as Admin. Then Click on Logged in Icon > Then click My DSpace.

Step 2: Click on Start a New Submission. To add Item to Collection.

Submitted By	Title	Submitted to
dspace dspace	Untitled	PDF Files

Step 2: Click on Submit to This Collection.

Submit: Choose Collection ?

Select the collection you wish to submit an item to from the list below, then click "Next".

You must select a collection for this item.

Collection	Select...
Select...	
Go to	DRDO > DESIDOC > PDF Files
DSpace Home	DRDO > DESIDOC >
My DSpace	

Step 3: Describe your Item that you added to the community.

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.

Enter the names of the authors of this item.

Authors + Add More

Enter the main title of the item.

Title *

If the item has any alternative titles, please enter them here.

Other Titles + Add More

Step 4: Describe more about your Item. Enter subject keywords, Abstract of Item, etc.

Submit: Describe this Item ?

Please fill further information about this submission below.

Enter appropriate subject keywords or phrases.

Subject Keywords Delete Delete + Add More

Enter the abstract of the item.

Abstract

The monograph is about the Defence Research and Development Organisation (DRDO) of the Ministry of Defence, Government of India. It has been long in the coming. It was in 1994 that Dr APJ Abdul Kalam who was the Scientific Adviser to Raksha Mantri mooted the idea of writing the History of DRDO to three of us, Mr NS Venkatesan, Dr Ramadas P Shenoy and Dr A Nagarathnam. All of us had retired from DRDO after long service in the Organisation. Mr Venkatesan and Dr Nagarathnam had been with the Organisation from the Defence Science Organisation days while I had joined the DRDO soon after it was formed. We had worked with six Scientific Advisers beginning from Dr DS Kothari and ending with Dr VS Arunachalam. We had seen and experienced the changes that took place, the progress that was made, the problems that were faced and the achievements that were reached. Each of us agreed to write about the activities in specific science and technology areas in which we had either worked or had more than a passing knowledge.|

Step 5: Upload your File. (Upload your Item).

Submit: Upload a File 

Please enter the name of the file on your local hard drive corresponding to your item. If you click "Browse...", a new window will appear in which you can locate and select the file on your local hard drive.

Please also note that the DSpace system is able to preserve the content of certain types of files better than other types. [Information about file types and levels of support for each are available.](#)

Select a file or drag & drop files ...

Files To Upload

#	Name	Status	Description
	8-defence-research.pdf		DRDO Defence Book

< Previous Cancel/Save Next >

Describe **Describe** **Upload** **Verify** **License** **Complete**

Submit: File Uploaded Successfully 

Your file was successfully uploaded.

The table below shows the files which have uploaded for this item.

Primary bitstream	File	Size	Description	File Format
	8-defence-research.pdf	738187 bytes	DRDO Defence Book	 

Add Another File

You can verify that the file(s) have been uploaded correctly by:

- Clicking on the filenames above. This will download the file in a new browser window, so that you can check the contents.
- The system can calculate a checksum you can verify. [Click here for more information](#). 

< Previous Cancel/Save Next >

Step 6: Then Verify you Item Details. (Recheck all the entered details of your Item).

Step 7: Enter License Details.

Step 8: Item Added Successfully.

 Logged in as dspace@localhost

Describe **Describe** **Upload** **Verify** **License** **Complete**

Submit: Submission Complete!

Your submission will now go through the workflow process designated for the collection to which you are submitting. You will receive e-mail notification as soon as your submission has become a part of the collection, or if for some reason there is a problem with your submission. You can also check on the status of your submission by going to the My DSpace page.

Go to My DSpace

Communities and Collections

Submit another item to the same collection

Theme by  CINECA

DSpace Software Copyright © 2002-2013 Duraspace - [Feedback](#)

SEARCHING IN DSPACE

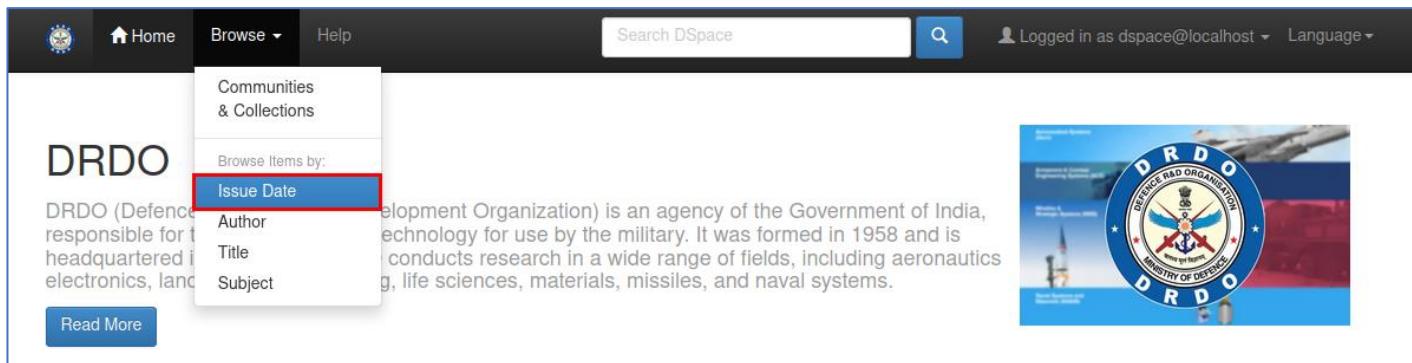
1) FIND AND ITEM USING BROWSE FEATURE

We can Browse Item by following ways:

1. By Issue Date
2. By Author Name
3. By Title
4. By Subject Name

Search Item by Issue Date in DSpace.

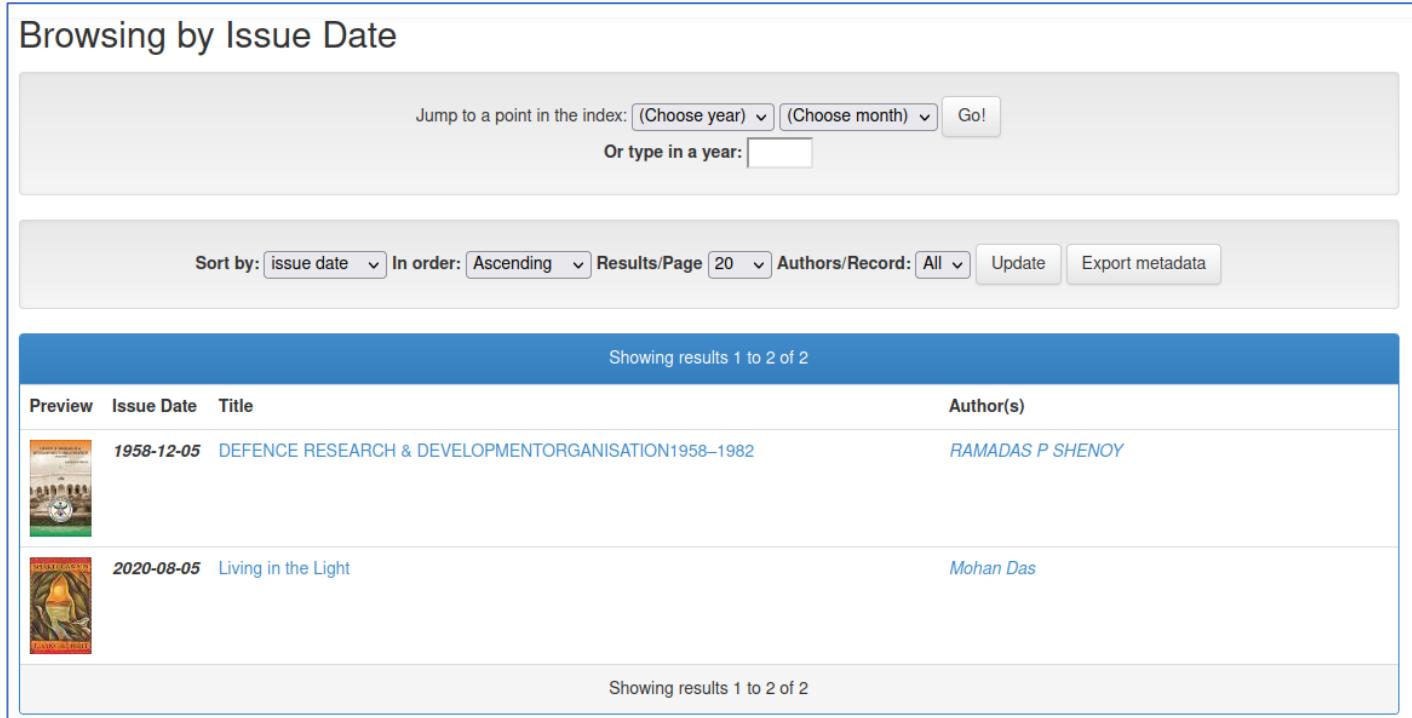
Step 1: Click on Browse Tab in Navigation Bar. Click Browse Item by Issue Date



The screenshot shows the DRDO DSpace homepage. At the top, there is a navigation bar with links for 'Home', 'Browse', and 'Help'. A search bar is also present. On the left, the DRDO logo is displayed. A dropdown menu titled 'Browse Items by:' is open, showing options: 'Communities & Collections', 'Issue Date' (which is highlighted with a red box), 'Author', 'Title', and 'Subject'. To the right of the menu, there is a brief description of DRDO and its emblem.

Step 2: Result of all Items are displayed. By default, items are sorted by the issue date in Ascending Order.

We can change various parameter to search such as: Sort by Title or Issue Date. Order: Ascending or descending, etc.



The screenshot shows the 'Browsing by Issue Date' interface. At the top, there are search fields for year and month, and a 'Go!' button. Below that, there are dropdown menus for 'Sort by' (set to 'issue date'), 'In order' (set to 'Ascending'), 'Results/Page' (set to 20), 'Authors/Record' (set to 'All'), and buttons for 'Update' and 'Export metadata'. The main area displays a table of results. The table has columns for 'Preview', 'Issue Date', 'Title', and 'Author(s)'. It shows two entries: one from 1958-12-05 titled 'DEFENCE RESEARCH & DEVELOPMENT ORGANISATION 1958-1982' by Ramadas P Shenoy, and another from 2020-08-05 titled 'Living in the Light' by Mohan Das. The table also includes a footer message 'Showing results 1 to 2 of 2'.

Step 3: Searching by Issue Year. Search or Type the year which you want to search then click on Go!

Browsing by Issue Date

Jump to a point in the index: (Choose year) (Choose month) Go!
Or type in a year:

Sort by: issue date In order: Ascending Results/Page 20 Authors/Record: All Update Export metadata

Step 4: Results of Selected or Typed Year is displayed only.

Browsing by Issue Date

Jump to a point in the index: (Choose year) (Choose month) Go!
Or type in a year:

Sort by: issue date In order: Ascending Results/Page 20 Authors/Record: All Update Export metadata

< previous		Showing results 2 to 2 of 2	
Preview	Issue Date	Title	Author(s)
	2020-08-05	Living in the Light	Mohan Das

< previous Showing results 2 to 2 of 2

Search Item by Author Name in DSpace.

Step 1: Click on Browse Tab in Navigation Bar. Click Browse Item by Author.

Home Browse Help

Search DSpace

Logged in as dspace@localhost Language

DRDO

DRDO (Defence Research & Development Organization) is an agency of the Government of India, responsible for developing defence technology for use by the military. It was formed in 1958 and is headquartered in Delhi, India. DRDO conducts research in a wide range of fields, including aeronautics, space, life sciences, materials, missiles, and naval systems.

Read More

Communities & Collections

Browse Items by:

- Issue Date
- Author**
- Title
- Subject

DRDO Defence Research & Development Organization Ministry of Defence

Step 2: Result of all Items are displayed by Author Names.

Browsing by Author

Jump to: 0-9 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
or enter first few letters: Go!

Order: Ascending Results/Page 20 Update

Showing results 1 to 2 of 2	
Mohan Das	1
RAMADAS P SHENOY	1

Showing results 1 to 2 of 2

Step 3: Searching the Author by typing the author's name then click on Go!

Jump to: 0-9 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
or enter first few letters: Ramadas

Step 3: Result of that Author are Shown. Click on Author Name to see in Detail.

Showing results 1 to 1 of 1

RAMADAS P SHENOY	1
------------------	---

Showing results 1 to 1 of 1

Step 4: The all the books or work of the author are shown in detail.

Browsing by Author RAMADAS P SHENOY

Jump to: 0-9 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
or enter first few letters: Go!

Sort by: title In order: Ascending Results/Page 20 Authors/Record: All Update

Showing results 1 to 1 of 1			
Preview	Issue Date	Title	Author(s)
	1958-12-05	DEFENCE RESEARCH & DEVELOPMENT ORGANISATION 1958-1982	RAMADAS P SHENOY

Showing results 1 to 1 of 1

Similarly, we can search Item by Title, or Subject.

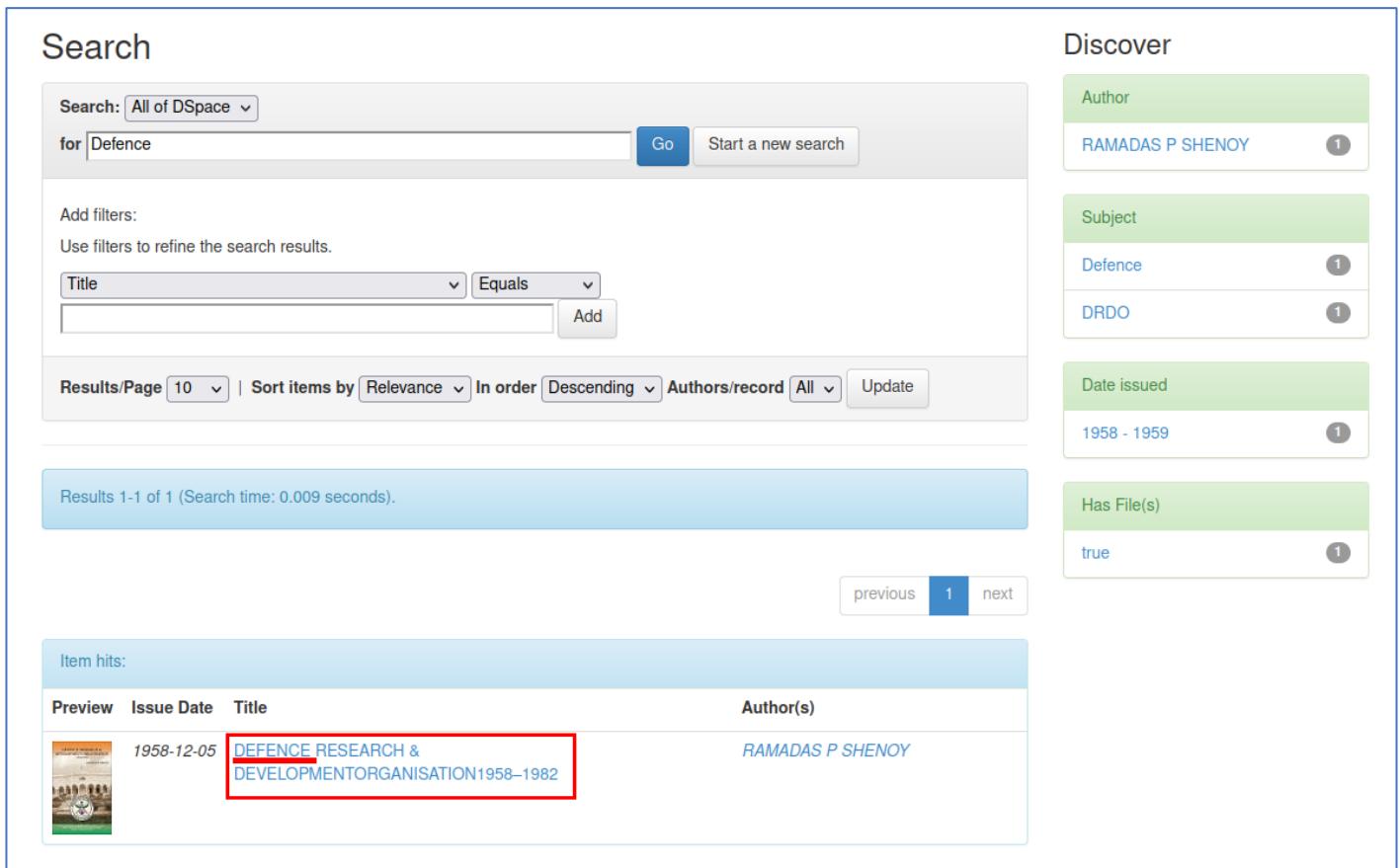
2) FIND AN ITEM USING SEARCH FEATURE

Step 1: Click on Home Tab in Navigation Bar. Enter a keyword to search in Search Box. After entering keyword. Click on Search Button or Press Enter.



The screenshot shows the DRDO (Defence Research and Development Organization) website. At the top, there is a navigation bar with links for 'Home', 'Browse', 'Help', and a search bar containing the word 'Defence'. A red box highlights the search bar. To the right of the search bar is a 'Sign on to:' link and a 'Language' dropdown. Below the navigation bar, the DRDO logo is displayed with a red arrow pointing towards it from the top right corner. The main content area features the text 'DRDO' and a brief description of the organization's mission and history. A 'Read More' button is visible at the bottom left of this section.

Step 2: The Search Page open. All Item are specified keyword in Metadata are listed. If the results show a large number of items, then finding a particular item can get tedious.



The screenshot shows a DSpace search results page. On the left, the search interface includes a dropdown for 'Search' set to 'All of DSpace', a search input for 'for Defence', and buttons for 'Go' and 'Start a new search'. Below this is a 'Add filters:' section with a dropdown for 'Title' and an 'Equals' dropdown, both currently empty, with an 'Add' button. There are also dropdowns for 'Results/Page' (set to 10), 'Sort items by' (Relevance), 'In order' (Descending), 'Authors/record' (All), and an 'Update' button. The main results area displays 'Results 1-1 of 1 (Search time: 0.009 seconds.)'. It shows a single item with columns for 'Preview', 'Issue Date' (1958-12-05), 'Title' ('DEFENCE RESEARCH & DEVELOPMENT ORGANISATION 1958-1982'), and 'Author(s)' (RAMADAS P SHENOY). This title row is highlighted with a red box. On the right, a 'Discover' sidebar lists filters: 'Author' (RAMADAS P SHENOY), 'Subject' (Defence, DRDO), 'Date issued' (1958 - 1959), and 'Has File(s)' (true). Each filter has a count of 1 and a circular icon with a question mark.

Step 3: DSpace facilitates refining the results using the search scope and filters. The drop down next to search is used for setting the scope of a search. This drop down contains options like all of these DSpace and the name of all communities in DSpace.

Additionally, we can apply filters to refine the search results we can add filters like title author, subject, date issued, etc.

Choose the Filters

Add filters:

Use filters to refine the search results.

Title	Equals	
Title		Add
Author		
Subject		
Date Issued		
Has File(s)		
???jsp.search.filter.original_bundle_filenames???		
???jsp.search.filter.original_bundle_descriptions???		

In order Descending

Add filters:

Use filters to refine the search results.

Title	Contains	
	Equals	
	Contains	
Results/Page 10 Sort items by Relevance	ID	
	Not Equals	
	Not Contains	
	Not ID	

Step 4: After Selecting all the Filters click on Go Button. All the Results will be displayed.

Search: DRDO	for Defence	Go	Start a new search
--------------	-------------	----	--------------------

Step 5: All the Results after applying filtration.

Results 1-1 of 1 (Search time: 0.002 seconds).			
previous 1 next			
Item hits:			
Preview	Issue Date	Title	Author(s)
	1958-12-05	DEFENCE RESEARCH & DEVELOPMENT ORGANISATION 1958-1982	RAMADAS P SHENOY

CUSTOMISATION IN DSPACE

Following customisation are done in DSpace:

1. Changing **Title**
2. Changing **Heading and Info**
3. Changing **Logo**
4. Changing **Favicon**
5. Changing **Top News**
6. Changing **Sidebar News** and **Top News**
7. Changing **Language**
8. Adding **Thumbnail** in DSpace
9. **Spell** Checking
10. Restriction on **File Access**

All these customisations are shown below.

1. CHANGING TITLE

Before:

DSpace at My University

After:

DRDO (Defence Research and Development Organisation)

Step 1: Open Terminal in Linux. (**Ctrl + Alt + T**). Type command: `sudo gedit /dspace/config/dspace.cfg` to edit “`dspace.cfg`” file.

```
root@rahul-VirtualBox:/home/rahul# sudo gedit /dspace/config/dspace.cfg
```

Step 2: Change **`dspace.name`** to desired name. For example, From “DSpace at My University” to “DRDO (Defence Research and Development Organisation)”

```
44 # Name of the site  
45 dspace.name = DSpace at My University  
46
```

```
44 # Name of the site  
45 dspace.name = DRDO (Defence Research and Development Organisation)  
46
```

Step 3: Save and Exit. And reload the browser.

2. CHANGING HEADING AND INFO

Before:

DSpace JSPUI

DSpace preserves and enables easy and open access to all types of digital content including text, images, moving images, mpegs and data sets

[Learn More](#)

After:

DRDO

DRDO (Defence Research and Development Organization) is an agency of the Government of India, responsible for the development of technology for use by the military. It was formed in 1958 and is headquartered in New Delhi. DRDO conducts research in a wide range of fields, including aeronautics, electronics, land combat engineering, life sciences, materials, missiles, and naval systems.

[Read More](#)

Step 1: Installing “**mlocate**”. Open Terminal in Linux. (**Ctrl + Alt + T**). Type command: `apt-get install mlocate` to install mlocate. Mlocate is a merging locate and database package. Help to find and locate any file present in System.

```
root@rahul-VirtualBox:/home/rahul# apt-get install mlocate
```

Step 2: Type command: `locate header-default.jsp` to find this file and edit this file later.

```
root@rahul-VirtualBox:/home/rahul# locate header-default.jsp
```

Step 3: Here we can see list of files with name “header-default.jsp” with complete path.

```
root@rahul-VirtualBox:/home/rahul# locate header-default.jsp
/build/dspace-6.3-src-release/dspace/modules/jspui/target/jspui-6.3/layout/header-default.jsp
/build/dspace-6.3-src-release/dspace/modules/jspui/target/jspui-6.3/layout/legacy/header-default.jsp
/build/dspace-6.3-src-release/dspace/modules/jspui/target/war/work/org.dspace/dspace-jspui/layout/header-default.jsp
/build/dspace-6.3-src-release/dspace/modules/jspui/target/war/work/org.dspace/dspace-jspui/layout/legacy/header-default.jsp
/build/dspace-6.3-src-release/dspace/target/dspace-installer/webapps/jspui/layout/header-default.jsp
/build/dspace-6.3-src-release/dspace/target/dspace-installer/webapps/jspui/Layout/legacy/header-default.jsp
/build/dspace-6.3-src-release/dspace-jspui/src/main/webapp/layout/header-default.jsp
/build/dspace-6.3-src-release/dspace-jspui/src/main/webapp/layout/legacy/header-default.jsp
/build/dspace-6.3-src-release/dspace-jspui/target/dspace-jspui-6.3/layout/header-default.jsp
/build/dspace-6.3-src-release/dspace-jspui/target/dspace-jspui-6.3/layout/legacy/header-default.jsp
/dspace/webapps/jspui/Layout/header-default.jsp
/dspace/webapps/jspui/Layout/legacy/header-default.jsp
/opt/tomcat/webapps/jspui/Layout/header-default.jsp
/opt/tomcat/webapps/jspui/Layout/legacy/header-default.jsp
root@rahul-VirtualBox:/home/rahul#
```

Step 4: Select this file – ‘`/opt/tomcat/webapps/jspui/Layout/header-default.jsp`’ and open with gedit to edit this file. Type this command to do this: `sudo gedit /opt/tomcat/webapps/jspui/Layout/header-default.jsp`

```
root@rahul-VirtualBox:/home/rahul# sudo gedit /opt/tomcat/webapps/jspui/Layout/header-default.jsp
```

Step 5: In line 135 and 136 change the content of `<h1>` Tag to change Heading and `<fmt>` tag to change description.

From:

```
132 <div class="container banner">
133   <div class="row">
134     <div class="col-md-9 brand">
135       <h1><fmt:message key="jsp.layout.header-default.brand.heading" /></h1>
136       <fmt:message key="jsp.layout.header-default.brand.description" />
137     </div>
138     <div class="col-md-3">
139   </div>
140 </div>
141 </div>
```

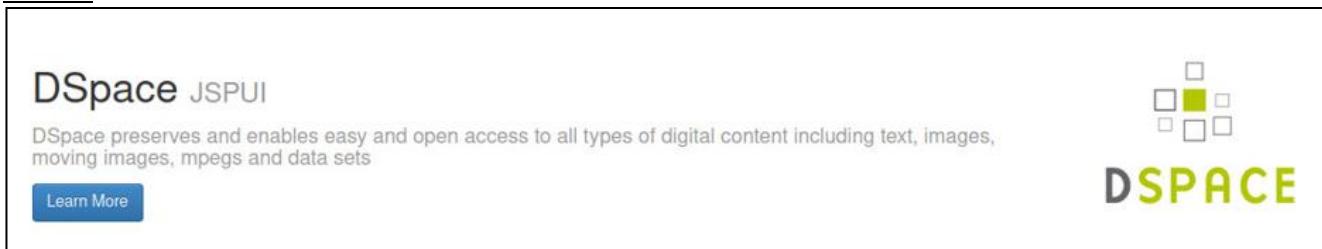
To:

```
134   <div class="col-md-9 brand">
135     <h1>DRDO</h1>
136
137     <h4> DRDO (Defence Research and Development Organization) is an agency of the Government of India, responsible for the development of technology for use by the military. It was formed in 1958 and is headquartered in New Delhi. DRDO conducts research in a wide range of fields, including aeronautics, electronics, land combat engineering, life sciences, materials, missiles, and naval systems. </h4>
138     <a href="https://www.drdo.gov.in/" class="btn btn-primary"> Read More </a>
139   </div>
140
141 </div>
142
```

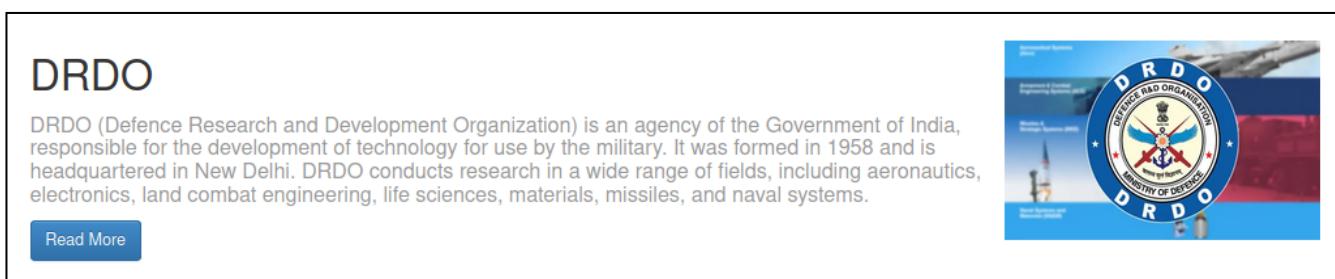
Step 6: Save and Exit. And reload the browser. Changes will be seen.

11. CHANGING LOGO

Before:



After:



Step 1: Open Terminal in Linux. (**Ctrl + Alt + T**).

Type command: `sudo gedit /opt/tomcat/webapps/jspui/layout/header-default.jsp` to edit “header-default.cfg” file.

```
root@rahul-VirtualBox:/# sudo gedit /opt/tomcat/webapps/jspui/layout/header-default.jsp
```

Step 2: In Line 143 change the source of the image.

From: src="<%= request.getContextPath() %>/image/logo.gif"

```
143 <div class="col-md-3">
```

To: src="https://st.adda247.com/https://wpassets.adda247.com/wp-content/uploads/multisite/sites/5/2021/01/02084218/DRDO-representational-logo.jpg"

```
146 <div class="col-md-3">
147     
150 </div>
```

Step 3: Save and Exit. Reload the browser and check the logo.

Other Method: We can directly change logo.gif file also. To do this copy and replace logo.gif file with our desired logo. Present at path: /opt/tomcat/webapps/jspui/image/.

Before:

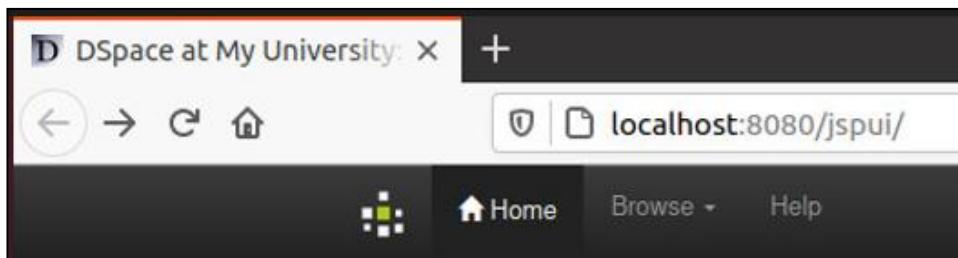


After:

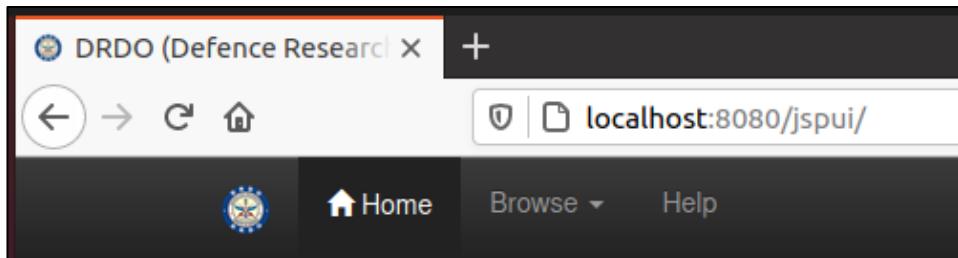


12. CHANGING FAVICON

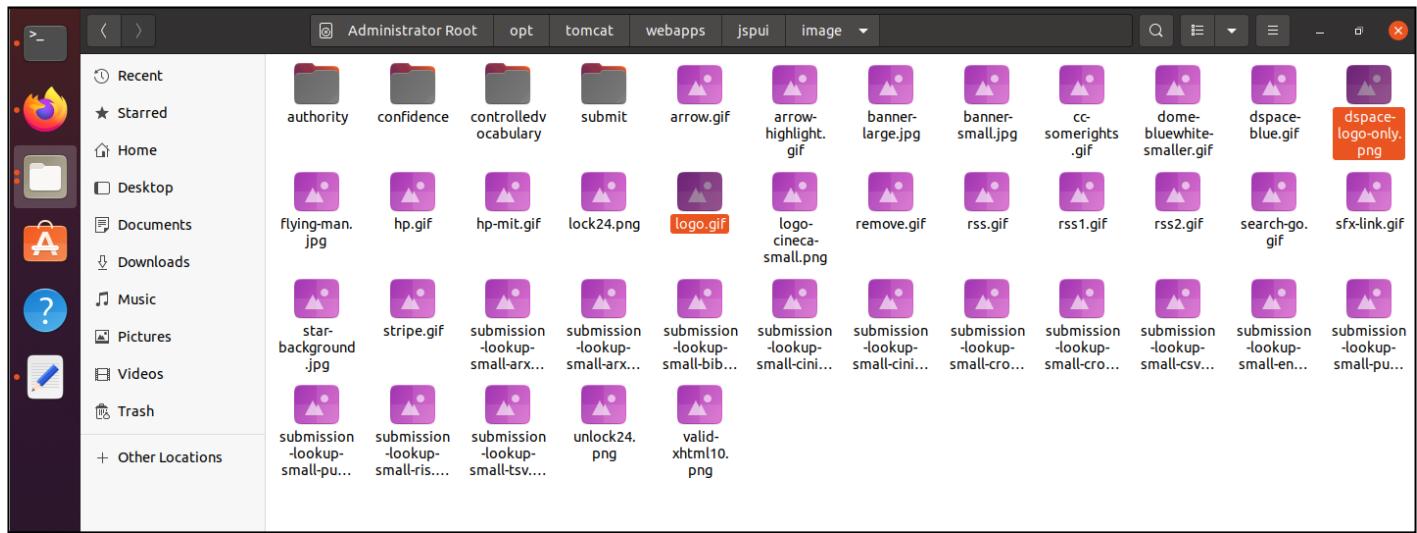
Before:



After:



Step 1: Open 'image' folder present at path: /opt/tomcat/webapps/jspui/image/.



Step 2: Copy and replace `dspace-logo-only.png` file with desired favicon but with same name.

Before:



After:

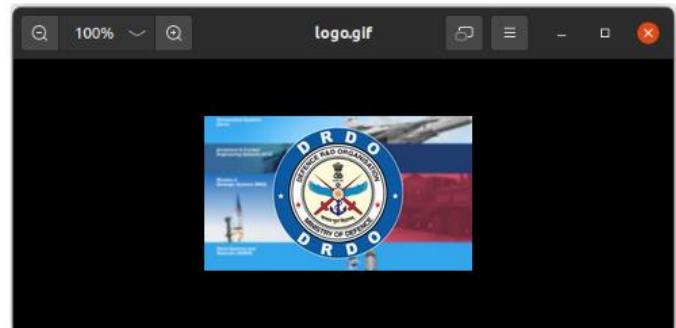


Step 2: Similarly, copy and replace `logo.gif` file with desired logo but with same name.

Before:



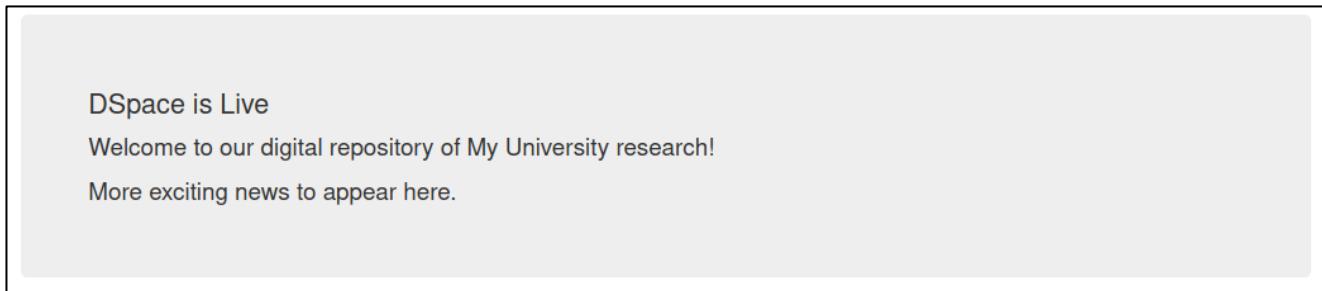
After:



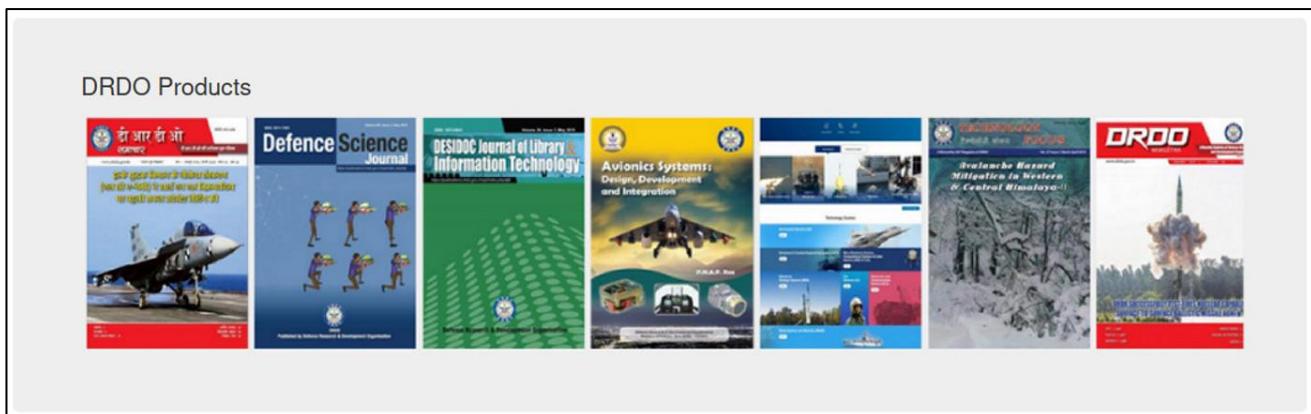
Step 3: Save and Exit. Reload the browser and check the Favicon and Logo.

13. CHANGING TOP NEWS

Before:



After:



METHOD – 1

Step 1: Open Terminal in Linux. (**Ctrl + Alt + T**).

Type command: `sudo gedit /dspace/config/news-top.html` to edit “news-top.html” file.

```
root@rahul-VirtualBox:/home/rahul# sudo gedit /dspace/config/news-top.html
```

From:

```
news-top.html
/dspace/config

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

To:

```
news-top.html
/dspace/config

1 <p> DRDO Products </p>
2
3 <marquee behavior="scroll" direction="left">
4
5 <a href="https://www.drdo.gov.in/Samachar" target=_blank>
6     </img>
7 </a>
```

Complete Code:

```
<p> DRDO Products </p>

<marquee behavior="scroll" direction="left">

<a href="https://www.drdo.gov.in/Samachar" target= _blank>
    </img>
</a>

<a href="https://publications.drdo.gov.in/ojs/index.php/dsj" target= _blank>
    </img>
</a>

<a href="https://publications.drdo.gov.in/ojs/index.php/djlit/index" target= _blank>
    </img>
</a>

<a href="https://www.drdo.gov.in/monograph/published" target= _blank>
    </img>
</a>

<a href="https://www.drdo.gov.in/labs-and-establishments/defence-scientific-information-documentation-
centre-desidoc" target= _blank>
    </img>
</a>

<a href="164.100.77.87/drdo/technology-focus" target= _blank>
    </img>
</a>

<a href="https://www.drdo.gov.in/newsletter" target= _blank>
    </img>
</a>

</marquee>
```

Step 3: Save and Exit. Reload the browser and check the News.

METHOD – 2

Method 2 is described in next Heading – Changing Top New and Sidebar News.

14. CHANGING SIDEBAR NEWS AND TOP NEWS

Before:

This is a default installation
of DSpace!

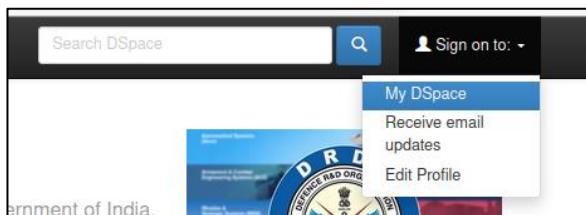
It can be extensively configured by installing modified
JSPs, and altering the site configuration.

After:

About DRDO

Title	Description
Formed	1958 (65 years ago)
Headquarters	DRDO Bhavan, New Delhi
Motto	"Strength's Origin is in Science"
Employees	30,000 (5,000 scientists)
Annual budget	Increase ₹11,375.50 crore
Minister responsible	Rajnath Singh, Minister of Defence
Parent agency	Ministry of Defence
Website	drdo.gov.in

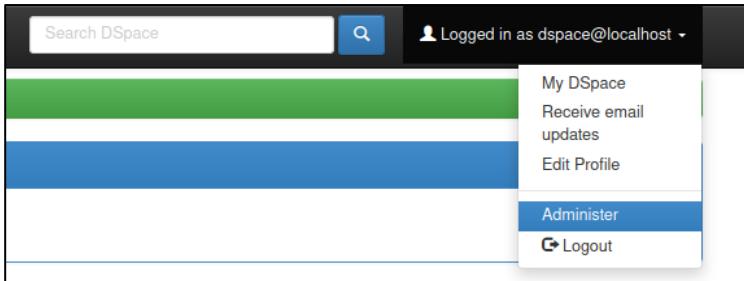
Step 1: Click on **Sign on to:** option in Navbar.



Step 2: Login to Dspace by entering E-mail Address and Password.

A screenshot of the DSpace login form. It contains two input fields: "E-mail Address:" with the value "dspace@localhost" and "Password:" with the value "*****". Below the password field is a green "Log In" button.

Step 3: Click on **Logged in as:** option in navigation bar. Then click on **Administer**.



Step 4: Click on **General Settings** Tab present in navigation bar. Then click on **Edit News**.

A screenshot of the "Administration Tools" page. At the top, there is a navigation bar with links for Home, Content, Access Control, Statistics, General Settings (which is currently selected and highlighted in blue), and Help. Below the navigation bar, there is a green header bar with the text "DRDO (Defence Research and Development Organisation)". The main content area has a title "Administration Tools" and a sub-instruction "Please select an operation from the main menu.". On the right side, there is a vertical sidebar with a dropdown menu under "General Settings". The options in the menu are: Metadata Registry, Bitstream Format Registry, Edit News (which is highlighted in blue), Edit Default, and License.

Step 4: Click on Sidebar News and Click on Edit button.

A screenshot of the "News Editor" page. The title bar says "News Editor". Below it, there is a sidebar with two tabs: "Top News" and "Sidebar News", with "Sidebar News" being the active tab (highlighted in red). At the bottom of the sidebar, there is a blue "Edit" button.

Step 5: Paste all the code of sidebar news in HTML format. Then click on **Save** Button. Then go to Home page where you can see sidebar news.

A screenshot of the "News Editor" page. The title bar says "News Editor". Below it, there is a text input area with a placeholder "Add or edit text in the box below to have it appear in the sidebar of the DSpace home page." and a note "You may format the text using HTML tags, but please note that the HTML will not be validated here." In the main content area, there is a section titled "News:" containing a large block of HTML code. At the bottom of the page, there are two buttons: "Save" (highlighted in blue) and "Cancel".

Step 6: Similarly, we can change Top-News also.

15. CHANGING LANGUAGE IN DSPACE

Before: XML UI

The screenshot shows the DSpace Repository homepage. At the top, there's a navigation bar with a logo, 'DSpace Home', and a 'Login' link. Below the navigation is a main content area with sections like 'DSpace Repository', 'Communities in DSpace' (listing 'DRDO'), 'Recently Added' (listing 'Living in the Light' by Mohan Das), and 'DEFENCE RESEARCH & DEVELOPMENT ORGANISATION 1958-1982' (listing 'RAMADAS P SHENOY'). To the right, there are search and browse boxes, a 'My Account' section with 'Login' and 'Register' links, and a 'Discover' section showing statistics for authors, subjects, and dates issued.

JSP UI

The screenshot shows the DSpace Repository homepage using a JSP-based user interface. It features a header with a logo, 'Home', 'Browse', 'Help', and a search bar. The main content area includes a 'DRDO' section with a brief description and a 'Read More' button, and a large circular image of the DRDO logo. The layout is more compact than the XML UI.

After: XML UI

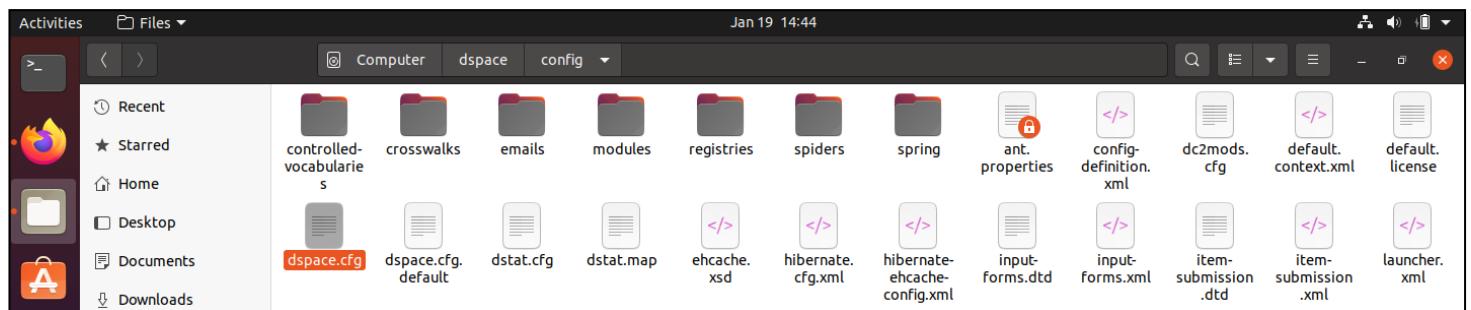
The screenshot shows the DSpace Repository homepage after changing the language to Arabic. The page title is 'المستودع الرقمي في جامعة طيبة'. The language switcher at the top right shows 'دخول', 'English', 'Gujarati', and 'العربي'. The main content area remains largely the same as the previous XML UI screenshot, but all text is now in Arabic. The search and browse boxes, 'My Account' section, and 'Discover' section are also in Arabic.

JSP UI

DRDO (Defence Research and Development Organization) is an agency of the Government of India, responsible for the development of technology for use by the military. It was formed in 1958 and is headquartered in New Delhi. DRDO conducts research in a wide range of fields, including aeronautics, electronics, land combat engineering, life sciences, materials, missiles, and naval systems.

Read More

Step 1: Open File: `dspace/config/dspace.cfg`



Step 2: Open and edit the file: `dspace.cfg`

From: `webui.supported.locales = en, de`

```
1236 # Default Locale
1237 # A Locale in the form country or country_language or country_language_variant
1238 # if no default locale is defined the server default locale will be used.
1239 default.locale = en
1240 webui.supported.locales = en, de|
1241
1242 # All the Locales, that are supported by this instance of DSpace
1243 # A comma-separated list of Locales. All types of Locales country, country_language, country_language_variant
1244 # Note that the appropriate file are present, especially that all the Messages_x.properties are there
```

To: `webui.supported.locales = en, gu, hi, ar`

```
1236 # Default Locale
1237 # A Locale in the form country or country_language or country_language_variant
1238 # if no default locale is defined the server default locale will be used.
1239 default.locale = en
1240 webui.supported.locales = en, gu, hi, ar|
1241
1242 # All the Locales, that are supported by this instance of DSpace
1243 # A comma-separated list of Locales. All types of Locales country, country_language, country_language_variant
1244 # Note that the appropriate file are present, especially that all the Messages_x.properties are there
1245 # may be used, e. g: webui.supported.locales = en, de
```

Step 3: Edit File: `local.cfg.EXAMPLE`

Add: `webui.supported.locales = en, gu, hi, ar` after line 58.

From:

```
*local.cfg.EXAMPLE  
/dspace/config  
50  
57 # Default language for metadata values  
58 #default.language = en_US  
59  
60 # Solr server/webapp.  
61 # DSpace uses Solr for all search/browse capability (and for usage statistics by default).  
62 # The included 'solr' webapp MUST be deployed to Tomcat for DSpace to function.  
63 # Usually it will be available via port 8080 and the 'solr' context path. But,  
64 # But, you may need to modify this if you are running DSpace on a custom port, etc.  
65 solr.server = http://localhost:8080/solr
```

To:

```
Open ▾ ⌂ Save local.cfg.EXAMPLE /dspace/config  
56 |  
57 # Default language for metadata values  
58 #default.language = en_US  
59 webui.supported.locales = gu, en, hi, ar  
60  
61 # Solr server/webapp.  
62 # DSpace uses Solr for all search/browse capability (and for usage statistics by default).  
63 # The included 'solr' webapp MUST be deployed to Tomcat for DSpace to function.  
64 # Usually it will be available via port 8080 and the 'solr' context path. But,  
65 # But, you may need to modify this if you are running DSpace on a custom port, etc.  
66 solr.server = http://localhost:8080/solr
```

Step 4: Save and Exit the File. Reload the browser and check language option.

16. ADDING THUMBNAIL IN DSPACE

Before:

Sort by: issue date ▾ In order: Ascending ▾ Results/Page: 20 ▾ Authors/Record: All ▾ Update Export metadata

Showing results 1 to 2 of 2

Issue Date	Title	Author(s)
1958-12-05	DEFENCE RESEARCH & DEVELOPMENTORGANISATION1958–1982	RAMADAS P SHENOY
2020-08-05	Living in the Light	Mohan Das

Showing results 1 to 2 of 2

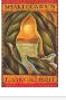
After:

Browsing by Issue Date

Jump to a point in the index: (Choose year) ▾ (Choose month) ▾ Go!
Or type in a year:

Sort by: issue date ▾ In order: Ascending ▾ Results/Page: 20 ▾ Authors/Record: All ▾ Update Export metadata

Showing results 1 to 2 of 2

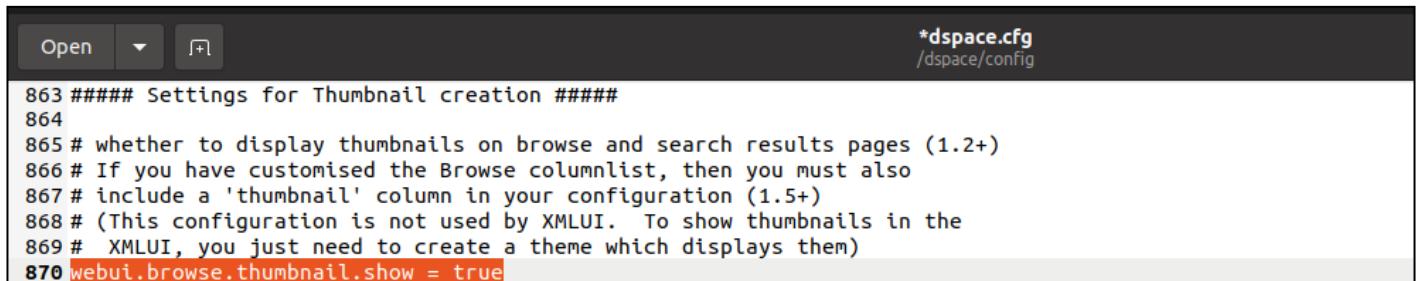
Preview	Issue Date	Title	Author(s)
	1958-12-05	DEFENCE RESEARCH & DEVELOPMENTORGANISATION1958–1982	RAMADAS P SHENOY
	2020-08-05	Living in the Light	Mohan Das

Showing results 1 to 2 of 2

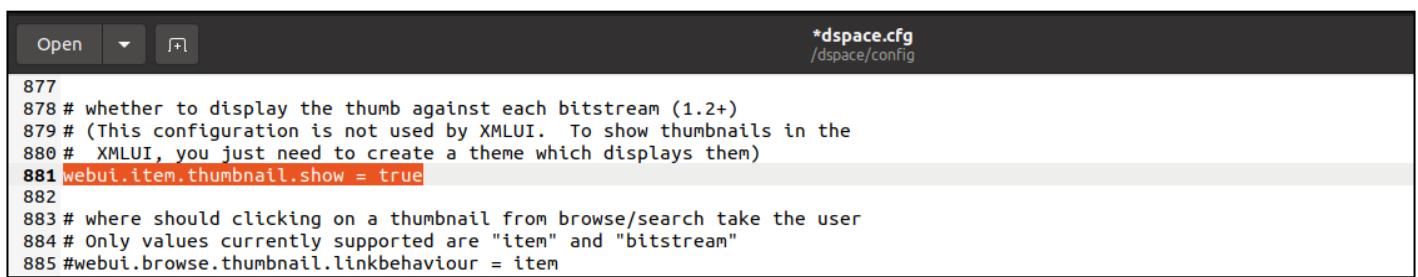
Step 1: Open file: `dspace/config/dspace.cfg`.

And do following Changes:

1. Set: `webui/browse.thumbnail.show = true`
2. Set: `webui/item.thumbnail.show = true`



```
863 ##### Settings for Thumbnail creation #####
864
865 # whether to display thumbnails on browse and search results pages (1.2+)
866 # If you have customised the Browse columnlist, then you must also
867 # include a 'thumbnail' column in your configuration (1.5+)
868 # (This configuration is not used by XMLUI. To show thumbnails in the
869 # XMLUI, you just need to create a theme which displays them)
870 webui.browser.thumbnail.show = true
```



```
877
878 # whether to display the thumb against each bitstream (1.2+)
879 # (This configuration is not used by XMLUI. To show thumbnails in the
880 # XMLUI, you just need to create a theme which displays them)
881 webui.item.thumbnail.show = true
882
883 # where should clicking on a thumbnail from browse/search take the user
884 # Only values currently supported are "item" and "bitstream"
885 #webui.browser.thumbnail.linkbehaviour = item
```

Step 2: Save and Exit.

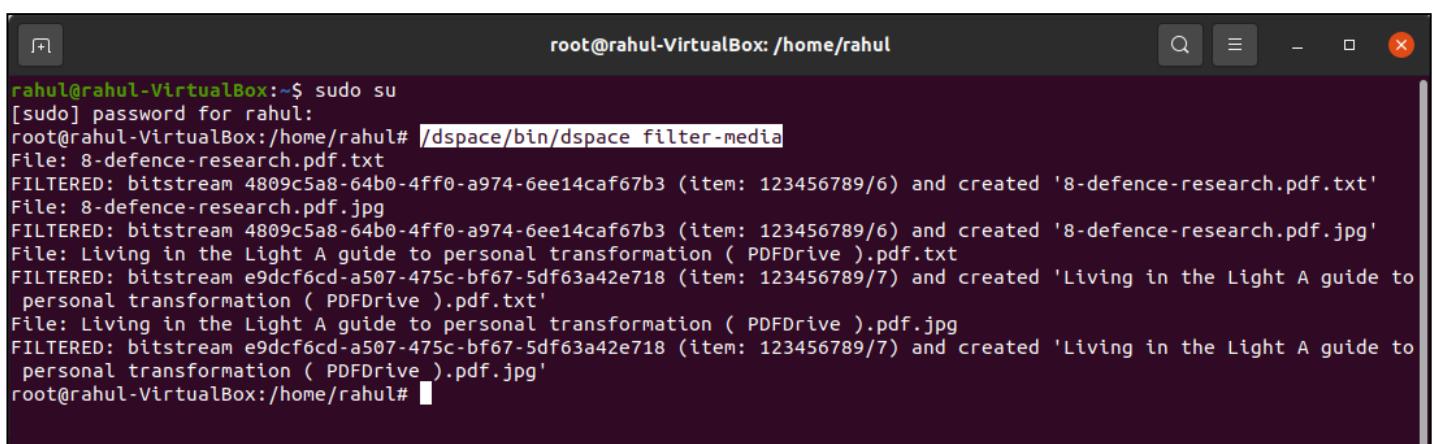
Step 3: Open Terminal in Linux (**Ctrl + Alt + T**).

Step 4: Login as Admin. (`sudo su`)

Step 5: Enter Command -> 1 or 2

Command 1: `/dspace/bin/dspace filter-media` :- For Regeneration Thumbnails that are not Generated.

Command 2: `/dspace/bin/dspace filter-media -f` :- For Regeneration of all Thumbnails.



```
rahul@rahul-VirtualBox:~$ sudo su
[sudo] password for rahul:
root@rahul-VirtualBox:/home/rahul# /dspace/bin/dspace filter-media
File: 8-defence-research.pdf.txt
FILTERED: bitstream 4809c5a8-64b0-4ff0-a974-6ee14caf67b3 (item: 123456789/6) and created '8-defence-research.pdf.txt'
File: 8-defence-research.pdf.jpg
FILTERED: bitstream 4809c5a8-64b0-4ff0-a974-6ee14caf67b3 (item: 123456789/6) and created '8-defence-research.pdf.jpg'
File: Living in the Light A guide to personal transformation ( PDFDrive ).pdf.txt
FILTERED: bitstream e9dcf6cd-a507-475c-bf67-5df63a42e718 (item: 123456789/7) and created 'Living in the Light A guide to
personal transformation ( PDFDrive ).pdf.txt'
File: Living in the Light A guide to personal transformation ( PDFDrive ).pdf.jpg
FILTERED: bitstream e9dcf6cd-a507-475c-bf67-5df63a42e718 (item: 123456789/7) and created 'Living in the Light A guide to
personal transformation ( PDFDrive ).pdf.jpg'
root@rahul-VirtualBox:/home/rahul#
```

Step 5: Close the Terminal and Reload the browser and check thumbnails.

17. SPELL CHECKING IN DSPACE

Spell checking is by default enable in DSpace. The Spelling which are Incorrect are underlined with red line.

The screenshot shows the 'Submit: Describe this Item' page. At the top, there are tabs: 'Describe' (highlighted in blue), 'Describe', 'Upload', 'Verify', 'License', and 'Complete'. On the right, it says 'Logged in as dspace@localhost'. Below the tabs, the title 'Submit: Describe this Item' is displayed with a question mark icon. A note says 'Please fill further information about this submission below.' There is a section for 'Subject Keywords' with two input fields: one containing 'DRDO' and another containing 'Defence', each with a delete icon. A 'Add More' button is available. Below this, a note says 'Enter the abstract of the item.' An 'Abstract' section contains a large text area with several misspellings underlined in red, such as 'monograph', 'Research', 'Development', 'Organisation', 'Government', 'Raksha', 'Mooted', 'History', 'Retired', 'Service', 'Organisation', 'Venkatesan', 'Dr', 'Shenoy', 'Nagarathnam', 'had been', 'the', 'Advisers', 'beginning', 'from', 'Kothari', 'ending', 'Arunachalam', 'seen', 'experienced', 'changes', 'place', 'progress', 'problems', 'faced', 'achievements', 'reached', 'each', 'agreed', 'write', 'activities', 'science', 'technology', 'areas', 'we', 'either', 'worked', 'had', 'knowledge', 'soon', 'was', 'formed', 'work', 'six', 'Scientific', 'Advisers', 'beginning', 'from', 'DS', 'Kothari', 'ending', 'with', 'Dr', 'VS', 'Arunachalam', 'We', 'had', 'seen', 'experienced', 'changes', 'took', 'place', 'the', 'progress', 'that', 'was', 'made', 'the', 'problems', 'that', 'were', 'faced', 'the', 'achievements', 'that', 'were', 'reached', 'Each', 'of', 'us', 'agreed', 'to', 'write', 'about', 'the', 'activities', 'in', 'specific', 'science', 'and', 'technology', 'areas', 'in', 'which', 'we', 'had', 'either', 'worked', 'or', 'had', 'more', 'than', 'a', 'passing', 'knowledge.]'. A 'View/Open' button is at the bottom of the abstract area.

18. RESTRICTION ON FILE ACCESS:

BEFORE: There is No **Restricted Access** Option below Item Name.

The screenshot shows the 'Files in This Item' page. It lists a single file: '8-defence-research.pdf' (Description: DRDO Defence Book, Size: 720.89 kB, Format: Adobe PDF). To the right of the file details is a thumbnail image of the PDF cover. Below the table are buttons for 'Show full item record' and a small icon. The entire interface is contained within a light blue header bar labeled 'Files in This Item:'.

AFTER: We can see the **Restricted Access** below the Item Name. (Successfully Applied Restriction).

The screenshot shows the same 'Files in This Item' page as before, but now the file '8-defence-research.pdf' has a 'Restricted Access' label with a lock icon to its left. A red arrow points from the bottom left towards this label. The rest of the page remains the same, with the 'View/Open' button at the bottom right.

Step 1: Click on **Sign In** -> Option. Then Select **My Dspace**.

The screenshot shows the DRDO DSpace homepage. At the top right, there is a 'Sign on to:' dropdown menu. A mouse cursor hovers over the 'My DSpace' option, which is highlighted with a blue background. Other options in the menu include 'Receive email updates' and 'Edit Profile'. The main content area features the DRDO logo and a brief description of the organization.

Step 2: Enter **E-mail Address** and **Password** to Login.

The screenshot shows a login form. It includes a link for new users to register, instructions to enter email and password, and fields for 'E-mail Address' (containing 'dspace@localhost') and 'Password' (containing '.....'). A green 'Log In' button is at the bottom. Below the form is a link for forgotten passwords.

Step 3: Click on Logged in as: (Person Icon). Then select **Administer**.

The screenshot shows the DRDO DSpace homepage. At the top right, there is a 'Logged in as' dropdown menu. A mouse cursor hovers over the 'Administer' option, which is highlighted with a blue background. Other options in the menu include 'My DSpace', 'Receive email updates', and 'Logout'. The main content area features the DRDO logo and a brief description of the organization.

Step 3: Click on **Access Control Tab** in navigation bar. Then select **Authorization**.

The screenshot shows the 'Administration Tools' page. At the top, there is a navigation bar with 'Content', 'Access Control' (which is currently selected and has a dropdown menu), 'Statistics', 'General Settings', and 'Help'. The 'Access Control' dropdown menu shows 'E-people', 'Groups', and 'Authorization', with 'Authorization' being the selected item. Below the navigation bar, the page title is 'Administration Tools' and it says 'Please select an operation from the main menu.'

Step 4: Click on **Manage an Item's Policies**.

The screenshot shows the 'Administer Authorization Policies' page. At the top, there is a header bar with 'DRDO (Defence Research and Development Organisation) / Administer'. Below the header, the page title is 'Administer Authorization Policies'. A sub-header says 'Choose a resource to manage policies for:'. There are four buttons in a grid: 'Manage a Community's Policies', 'Manage Collection's Policies', 'Manage An Item's Policies' (which is highlighted with a red border), and 'Advanced/Item Wildcard Policy Admin Tool'.

Step 5: Enter Item ID then Click on **Find** Button.

DRDO (Defence Research and Development Organisation) / Administer

Select an Item ?

Enter the Handle or internal item ID of the item you wish to select.

Handle: Find

Internal ID: Find

Cancel

Step 6: Click on **Edit** Button -> to Edit Policy of Item.

ID	Action	EPerson	Group	
41	READ	...	Anonymous	Edit Delete

Step 7: Select Action and Change from (*READ* to *WITHDRAWN_READ*). Then click on **Save** Button.

Home Content Access Control Statistics General Settings Help Logged in as dspace@localhost

DRDO (Defence Research and Development Organisation) / Administer

Edit Policy for Item 7f38323a-a058-4c7b-9aea-0f2abeac8f05: ?

Group:
 Anonymous
COLLECTION_ac6314de-0b6f-49f2-be25-d8db87d1922e_SUBMIT

Action:

Save Cancel

Step 8: Similar, do this (*WITHDRAWN_READ*) for **Bundle ORIGINAL** and **Bitstream**. Then Exit.

ID	Action	EPerson	Group	
40	READ	...	Anonymous	Edit Delete

Policies for Bundle ORIGINAL (8a7d927d-c878-4ae2-827c-58e36b3bd54a)

ID	Action	EPerson	Group	Edit	Delete
41	WITHDRAWN_READ	...	Anonymous	Edit	Delete

Bitstream 4809c5a8-64b0-4ff0-a974-6ee14caf67b3 (8-defence-research.pdf)

ID	Action	EPerson	Group	Edit	Delete
42	WITHDRAWN_READ	...	Anonymous	Edit	Delete

Step 9: Exit and Reload the Browser. And check if the file accessibility.

*** All the 10 Customisation/Changes are shown below. Before and After. ***

BEFORE: (NO CHANGES)

DSpace JSPUI

DSpace preserves and enables easy and open access to all types of digital content including text, images, moving images, mpegs and data sets

[Learn More](#)

DSpace at My University

DSpace is Live
Welcome to our digital repository of My University research!
More exciting news to appear here.

This is a default installation
of DSpace!

It can be extensively configured by installing modified
JSPs, and altering the site configuration.



DSPACE

AFTER: (ALL CHANGES)

Home Browse Help Search DSpace Sign on to: Language

DRDO

DRDO (Defence Research and Development Organization) is an agency of the Government of India, responsible for the development of technology for use by the military. It was formed in 1958 and is headquartered in New Delhi. DRDO conducts research in a wide range of fields, including aeronautics, electronics, land combat engineering, life sciences, materials, missiles, and naval systems.

Read More

DRDO (Defence Research and Development Organisation)

DRDO Products

About DRDO

Title	Description
Formed	1958 (65 years ago)
Headquarters	DRDO Bhavan, New Delhi
Motto	"Strength's Origin is in Science"
Employees	30,000 (5,000 scientists)
Annual budget	Increase ₹11,375.50 crore
Minister responsible	Rajnath Singh, Minister of Defence
Parent agency	Ministry of Defence
Website	drdo.gov.in

Communities in DSpace

Choose a community to browse its collections.

DRDO
Top Level Community - DRDO

Discover

Author	Subject	Date issued
Mohan Das	Defence	2010 - 2020
RAMADAS P SHENOY	DRDO	1958 - 1959
	Light Book	

Has File(s)
true

Theme by  CINECA

DSpace Software Copyright © 2002-2013 Duraspace - Feedback

GLOSSARY AND DEFINITIONS

DSpace is an open-source digital repository software that enables the management and preservation of digital content. It is widely used by academic institutions, libraries, archives, and research organizations to store, manage, and provide access to their digital collections. The following glossary provides definitions of key terms related to DSpace:

1. **XMLUI:** XMLUI stands for Extensible Markup Language User Interface (XMLUI) is a customizable user interface for DSpace that enables users to access and manage digital content. XMLUI is based on the XML markup language and provides a flexible and extensible platform for customizing the user interface of a DSpace repository.
2. **JSPUI:** JSPUI stands for JavaServer Pages User Interface and is one of the two default user interfaces for DSpace repositories, alongside XMLUI. JSPUI is a web-based user interface that allows users to access and manage digital content within a DSpace repository.
3. **Digital Repository:** A digital repository is a storage system that houses digital content, such as documents, images, audio files, and videos, in a standardized format. The content is organized and managed using metadata, which provides descriptive information about the content and enables users to search and discover it.
4. **Metadata:** Metadata is descriptive information that provides context and meaning to digital content. It includes information such as the author, title, date, subject, and format of the content. Metadata enables users to search and discover digital content by using keywords or phrases.
5. **Collection:** A collection is a group of digital content that is organized based on a specific topic, theme, or format. Collections can be created by users, and can be made public or private depending on the permissions granted by the administrator.
6. **Item:** An item is a single digital object, such as a document, image, or video, that is stored within a collection. Each item has its own metadata, which provides descriptive information about the item.
7. **Bitstream:** A bitstream is a file that represents a digital object, such as a document, image, or video, within a DSpace repository. Bitstreams are stored separately from the metadata and can be accessed and downloaded by users.
8. **Community:** A community is a group of collections that are related based on a common theme or purpose. Communities can be created by users and can be used to organize and manage digital content within a DSpace repository.
9. **Administrator:** An administrator is a user who has the highest level of privileges within a DSpace repository. Administrators are responsible for managing the repository, creating and managing collections and communities, and granting permissions to users.
10. **User:** A user is anyone who has access to a DSpace repository. Users can create and manage collections, upload and download digital content, and search for and access content within the repository.
11. **Workflow:** A workflow is a set of rules and procedures that govern the management of digital content within a DSpace repository. Workflows can be customized to fit the needs of the organization and can include tasks such as content review, approval, and publication.

12. **License:** A license is a legal agreement between the content owner and the user that governs the use and distribution of digital content within a DSpace repository. Licenses can be customized to fit the needs of the organization and can include terms such as attribution, non-commercial use, and share-alike.
13. **Open Access:** Open Access is a publishing model that provides free, immediate, online access to digital content. Open Access promotes the dissemination of knowledge and facilitates collaboration among researchers and scholars.
14. **Preservation:** Preservation is the process of ensuring the long-term accessibility and usability of digital content within a DSpace repository. Preservation includes activities such as format migration, data backup, and disaster recovery planning.
15. **Discovery:** Discovery is the process of searching and accessing digital content within a DSpace repository. Discovery can be facilitated through various

Common shortforms and their corresponding full forms used in DSpace

1. **JSPUI** - JavaServer Pages User Interface
2. **XMLUI** - Extensible Markup Language User Interface
3. **SSH** - Secure Shell
4. **DSpace API** - DSpace Application Programming Interface
5. **DOI** - Digital Object Identifier
6. **RDF** - Resource Description Framework
7. **SWORD** - Simple Web-service Offering Repository Deposit
8. **OAIS** - Open Archival Information System
9. **HTML** - Hypertext Markup Language
10. **CSS** - Cascading Style Sheets
11. **JS** - JavaScript
12. **PDF** - Portable Document Format
13. **JPG** - Joint Photographic Experts Group
14. **PNG** - Portable Network Graphics
15. **AIP** - Archival Information Package
16. **DC** - Dublin Core
17. **IR** - Institutional Repository
18. **REST** - Representational State Transfer
19. **SOLR** - Search engine based on Lucene
20. **UTF-8** - Unicode Transformation Format, 8-bit.

USER FAQs

What is DSpace?

A groundbreaking digital repository system, DSpace captures, stores, indexes, preserves and redistributes an organization's research material in digital formats. Research institutions worldwide use DSpace for a variety of digital archiving needs - from institutional repositories (IRs) to learning object repositories or electronic records management, and more. DSpace is freely available as open-source software you can customize and extend. An active community of developers, researchers and users worldwide contribute their expertise to the DSpace Community.

Who can join the DSpace Community?

Anyone who uses DSpace can get involved, in a number of different ways: programming, defining feature requirements, writing documentation, testing new features, sharing your design or marketing expertise. Get involved by joining the DSpace mailing lists, adding your projects, experiences, and comments to the DSpace Wiki, and collaborating with other DSpace community members.

Who built DSpace?

The MIT Libraries and Hewlett-Packard (HP) originally developed DSpace, but the software is now supported by DuraSpace. The system is now freely available to research institutions world-wide as an open-source system that can be customized and extended.

Who manages DSpace?

DSpace is freely available as open-source software. The DSpace Community manages the code base and releases new versions of the software. An active community of developers, researchers and users worldwide contribute their expertise to the DSpace Community.

Does the DSpace project have a supporting organization?

The success of any open-source project lies with the community contributing its collective energy, knowledge, enthusiasm, and effort. DSpace is developed and supported by the user community, with the help and guidance of DuraSpace. DuraSpace is a not-for-profit organization formed in July 2009. The organizations which supported the DSpace project previously, the DSpace Foundation (2007-2009) and the DSpace Federation (2003-2004) have ceased operation.

Is DSpace free?

Yes. The DSpace system is freely available as open-source software under the terms of the BSD distribution license.

Who can download the software?

Open-source systems like DSpace are available for anyone to download and run at any type of institution, organization, or company (or even just an individual). Users are also allowed to modify DSpace to meet an organization's specific needs. The BSD distribution license describes its specific terms of use.

DSpace is freely available as open-source software from GitHub. For more information on the most recent release of the software see the Current Release Notes.

Where can I download the DSpace open-source software?

DSpace is freely available as open-source software from GitHub. If you are familiar with Git, you can also download the latest code via our GitHub Code Repository.

Can I change the DSpace system?

Yes, you can customize and extend the system to suit your organization's needs. DSpace was designed to make adapting it for individual organizations as easy as possible. See the section on how to contribute on the DSpace Wiki for information on submitting code changes to DSpace. Each application is different, but most organizations need to customize the authentication system, for example, to work with existing systems. Some organizations may want to substitute the open-source tools supplied with DSpace with different ones (for example, replacing PostgreSQL with MySQL or Oracle).

Where can I learn more about Open Source?

O'Reilly & Associates has a very helpful web site devoted to open source: <http://opensource.oreilly.com/>.

What kind of content does DSpace support?

DSpace accepts all manner of digital formats. Some examples of items that DSpace can accommodate are:

Documents, such as articles, preprints, working papers, technical reports, conference papers, Books, Data sets, Computer programs, Visualizations, simulations, and other models, Multimedia publications, Administrative records, Published books, Overlay journals, Bibliographic datasets, Images, Audio files, Video files, e-formatted digital library collections, etc.

Can I export my digital material out of DSpace?

Yes. Currently DSpace has an Item Exporter which supports exporting digital content, along with its metadata, in a simple XML-encoded file format (where each item is exported into a separate directory). See the "Item Importer and Exporter" section of the DSpace Documentation's System Administration chapter for more details.

Will DSpace interoperate with other systems running at my organization?

Yes, DSpace has documented Java APIs you can customize to allow interoperation with other systems an institution might be running (for example, a department's web document system auto-depositing in DSpace, or a campus data warehouse).

Where can I find DSpace technical documentation?

You can find DSpace system documentation on the DSpace.org website or on the DSpace Resources wiki page.

I've installed DSpace and I have questions/problems/comments. What should I do?

The DSpace Community of developers support one another and exchange ideas and solutions on the DSpace mailing lists. Before you post a question or problem, check to see if your question has been answered already.

I've found a bug in the software. How do I report it?

You can report bugs and suggest enhancements through the Software Bug/Feature Tracking System (JIRA).

Bugs will be fixed as soon as possible, within the limits of the DSpace team's technical support resources. The team considers all enhancements, and if an enhancement is accepted, adds it to the enhancement list for development as time and resources allow. Of course, any users working with the open-source code are welcome to fix a bug or make an improvement to the system. See our DSpace Contribution Guidelines to learn how.

Who provides technical support for the DSpace software platform?

DSpace has a very active community of developers which contribute expertise and support through the DSpace-Tech mailing list, and the DSpace wiki. To work with the DSpace system you'll need local technical resources (hardware, technical experts, and so on) to really take advantage of the system. The DSpace web site offers technical documentation, and you can join the DSpace-Tech mailing list, to ask questions or post solutions.

How much maintenance does a DSpace instance require?

While the DSpace software itself requires very little maintenance, the usual IT overhead for data backup, etc. applies. It is also typical for expectations and requirements to evolve once the instance is operational. Initial system usage often exposes areas for reorganization, metadata correction, and the inevitable requests to remove prematurely or incorrectly deposited items. An ongoing maintenance estimate should incorporate IT time based on the expected size of the repository to backup, ongoing local development based on the amount of customization, and repository content management based on the anticipated rate of deposit.

Can anyone help me to setup or install DSpace?

When you run into any trouble using or installing DSpace, a large community of users lies at your fingertips in the mailing lists. The Technical mailing list is the place to be for technical troubleshooting, while more general questions about the software can best be posted to the General Mailing list.

What is Metadata?

Metadata is literally "data about data." It is descriptive information used for querying. Some metadata can be done mechanically, such as file sizes, checksums, and full-text indexing, for instance. Other metadata is a higher order of human-made description such as titles, authors, unique identifiers, and abstracts. DSpace uses a qualified version of Dublin Core metadata across all content. Some communities or collections may also have tailored metadata available (such as MARC records for book collections, or FGDC records for geographic datasets).

Does DSpace support OAI?

DSpace supports the Open Archives Initiative's Protocol for Metadata Harvesting (OAI-PMH) v2.0 as a data provider. OAI support was implemented using OCLC's OAICat open-source software to make DSpace item records available for harvesting. Many institutions running DSpace choose to register as a data provider with the Open Archives Initiative.

What kinds of DSpace services are other institutions building?

Research institutions worldwide use DSpace to meet a variety of digital archiving needs:

1. Institutional Repositories (IRs)
2. Learning Object Repositories (LORs)
3. e-Theses
4. Electronic Records Management (ERM)
5. Digital Preservation
6. Publishing
7. Etc.

REFERENCES

1. DSpace Official website – <https://dspace.lyrasis.org/>

This is the official website of DSpace, where you can download the software, find documentation, and access support resources.

2. DSpace Documentation - <https://wiki.lyrasis.org/display/DSPACE/Documentation>

This is the official documentation for DSpace and all its versions. From 1.x to 7.x.

3. DSpace GitHub repository - <https://github.com/DSpace/DSpace>

This is the official GitHub repository for DSpace, where you can find the source code, contribute to the development of the software, and report issues.

4. DSpace Community Wiki - <https://wiki.duraspace.org/display/DSPACE/>

This is a community-driven wiki that provides documentation, tutorials, and best practices related to DSpace.

5. DSpace mailing lists - <https://wiki.duraspace.org/display/DSPACE/Mailing+Lists>

DSpace mailing lists are a great way to connect with other users and developers of DSpace, ask questions, and get help with technical issues.

6. DSpace YouTube Channel - <https://www.youtube.com/@dSPACEvideos>

The DSpace YouTube channel is a repository of video tutorials and presentations related to DSpace. Here recorded webinars, conference presentations, and other video resources that cover a range of topics related to DSpace are found.