

**Connecting to a Cloud-Hosted DSpace Instance (Version 1.8.2)  
and Testing the enhancements in DSpace 3.0 Demo.**

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**Introduction:**

An institutional repository (IR) is one of the digital environments where an organization can archive its intellectual output. The proliferation of IRs has been fuelled by the need in research institutions to publish their research results to a wider public audience. The growth of the open access movement has also brought to light the great need for IRs. The IR is seen as a platform to share research findings within and without an institution and also promotes future access to research output. This is mainly because researchers tend to lose copies of their own work as backing up of electronic information remains a challenge to individuals. This has been used by many IR promoters as a marketing tool within institutions.

DSpace is one of the open source software that is used to build IRs and this project employs DSpace.

**Problem Statement:**

Many institutions have been introduced to DSpace but lack the necessary IT skilled staff to manage DSpace configurations. Meanwhile, in other institutions, there is a high IT staff turnover. If the IT person abruptly leaves an institution, it leaves a vacuum, thereby causing irregular connectivity of the IR whenever there is need to handle DSpace troubleshooting tasks or specific customizations.

Another part of this project was to identify and evaluate some of the new features of the latest DSpace version 3.0. It was interesting to learn from the introductory lectures about the possibility of using a demo DSpace site, which is as good as a repository itself. With this

knowledge, I am in position to advise Makerere University whether it is appropriate to upgrade to the new version or not.

### **Methodology:**

The methodology involved three steps, namely:-

1. Creation of Account with Amazon Web Services.  
The project went through the process of creation of a free tier account on the Amazon Web Services website (as in print screen images).
2. Connecting to DSpace  
The next stage was to go through the process of connecting to and configuring a free pre-installed DSpace instance version 1.8.2 running on a virtual Ubuntu server, that is available for public use (as showed in the print-screen images)
3. Creation of Communities and Collections in the Amazon cloud-hosted version and the DSpace 3.0 demo site.

### **Results:**

One of the solutions is to have a fully installed DSpace instance in the cloud and then simply manage the graphical user interface of the repository. Payments can then be made for a cloud-hosted service such as Amazon Web Services. This allows one more space on a virtual server and DSpace server-side work such as troubleshooting and any specific customizations on request. It offers organizations the opportunity to pay for only services required, thereby allowing for only content management tasks to be handled by the institution. Therefore the project provides an alternative to in-house DSpace server-side management. However, within the framework of the Lib@web 2012 training, the project was limited to the free tier of the Amazon Web Services. It has therefore been limited to the features which are available in the free tier. To explore more robust features of the Amazon Web Services one is required to upgrade their account and subsequently pay for the services.

Screen shots follow below to demonstrate the methodology and project results:

## **Open Amazon Web Services Website**



Sign Up

My Account / Console

English

AWS Products & Solutions

dspace

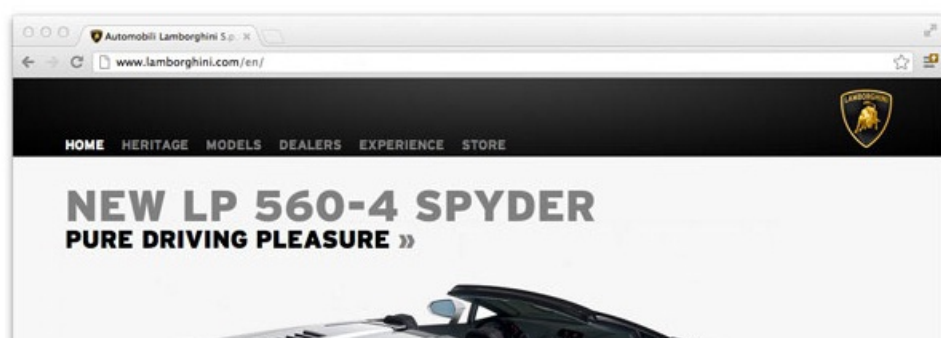
Entire Site



Developers

Support

# Enterprise innovation. Powered by the AWS Cloud.



**“We reduced the cost of our infrastructure by 50%, while achieving better performance and scalability.”**

- Roberto Ciacci, Digital Marketing Manager



## Create an Account



## Sign In or Create an AWS Account

You may sign in using your existing Amazon.com account or you can create a new account by selecting "I am a new user."

My e-mail address is:

- I am a new user.
- I am a returning user and my password is:

[Sign in using our secure server](#)

[Forgot your password?](#)

## Submit your details



### Login Credentials

Use the form below to create login credentials that can be used for AWS as well as Amazon.com.

**My name is:**


**My e-mail address is:**

**Type it again:**

note: this is the e-mail address that we will use to contact you about your account

**Enter a new password:**

**Type it again:**

[Continue](#) 

## Submit Contact Details

### Contact Information

\* required fields

<b>Full Name*</b> :	<input type="text" value="Andrew Mwesigwa"/>
<b>Company Name:</b>	<input type="text" value="Makerere University Library"/>
<b>Country*</b> :	<input type="text" value="Uganda"/>
<b>Address Line 1*</b> :	<input type="text" value="P.O.box 20220, Kampala"/>
	<small>Street address, P.O. box, company name,</small>
<b>Address Line 2:</b>	<input type="text"/>
	<small>Apartment, suite, unit, building, floor, etc.</small>
<b>City*</b> :	<input type="text" value="Kampala"/>
<b>State, Province or Region*</b> :	<input type="text" value="Uganda"/>
<b>ZIP or Postal Code*</b> :	<input type="text" value="256"/>
<b>Phone number*</b> :	<input type="text" value="+256-712131871"/>

### AWS Customer Agreement

## Payment Information

### Enter Your Payment Information Below

Your credit card will not be charged until you begin using AWS, and many of your applications and uses of AWS may be able to operate within the AWS free usage tier. If your monthly usage goes beyond the free tier, your AWS service charges will be billed to the credit card you provide below. [View detailed service pricing](#)


\* required fields

<b>Credit Card*</b> :	<input type="text" value="Visa"/>
<b>Card Number*</b> :	<input type="text" value="220091120092909920"/>
<b>Cardholder's Name*</b> :	<input type="text" value="Andrew Mwesigwa"/>
<b>Expiration Date*</b> :	<input type="text" value="02"/> <input type="text" value="2013"/>

### Enter Your Billing Address

Select the billing address associated with your credit card.

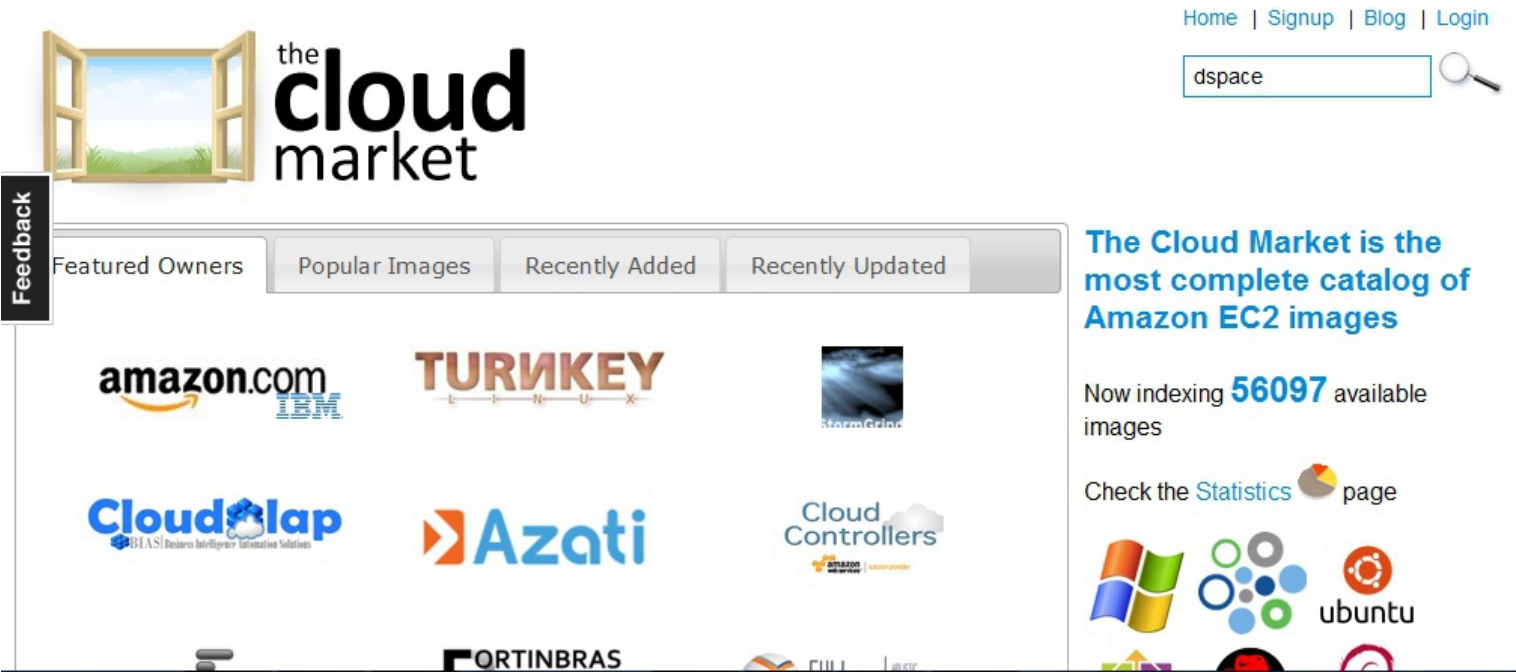
- Use my contact address as my billing address  
(P.O.box 20220, Kampala, Kampala, Uganda 256, UG, +256-712131871)
- Enter a new address

Continue 

Before your account is approved, Amazon will contact you by phone to verify your identity, contact details and payment information. This may take up to 24 hours before you are allowed to use the cloud service. Amazon prefers serious subscribers who can potentially be clients. I found this to be queer and unnecessary for a free tier account, aimed at using the free tier services.

## Connecting to the Pre-installed DSpace Instance

Make sure you are logged in your Amazon Web Services Account. Go to the Amazon web services catalog website [www.thecloudmarket.com](http://www.thecloudmarket.com) and search for DSpace. Select the image of the desired cloud service (dspace 1.8.2) and launch it.



# Launch

powered by

 ubuntu

claim this image

 Share

**Feedback**

Details | Readme | Definition | Comments (0) | Tags (3)

**Name** DSpace 1.8.2 Pre-installed instance. (Ubuntu Natty)

**Description** DSpace 1.8.2 Curation Task Demos. Created for OR2012. Available for public use.

**Rating** Login to vote!  


**Launch** 

[WE BLOG](#) | [WE TWEET](#) | [WE HELP](#) | [ABOUT US](#)

## Next pages show DSpace instance being requested


### Request Instances Wizard

Cancel [x]

CHOOSE AN AMI | INSTANCE DETAILS | CREATE KEY PAIR | CONFIGURE FIREWALL | REVIEW


The bookmark that was activated refers to the AMI below. Please review...

**AMI Details**

**Image Id:** ami-8d9e31e4  
**Owner:** 955139503813  
**Manifest:** 955139503813/DSpace 1.8.2 Pre-installed instance. (Ubuntu Natty)  
**Platform:**  Ubuntu  
**Architecture:** i386  
**Root Device Type:** ebs

**Attached Block Devices**

Device Name	Volume Size
/dev/sda1	8 GB
/dev/sda2	ephemeral0

[Continue](#) 

## Create a Key Pair that will be used to identify your instance each time you login

**Request Instances Wizard** Cancel

CHOOSE AN AMI    INSTANCE DETAILS    **CREATE KEY PAIR**    CONFIGURE FIREWALL    REVIEW

Public/private key pairs allow you to securely connect to your instance after it launches. For Windows Server Instances, a Key Pair is required to set and deliver a secure encrypted password. For Linux Server Instances, a key pair will allow you to SSH into your instance.

To create a key pair, enter a name and click **Create & Download your Key Pair**. You will then be prompted to save the private key to your computer. Note, you only need to generate a key pair once - not each time you want to deploy an Amazon EC2 instance.

**Choose from your existing Key Pairs**

Your existing Key Pairs\*:

**Create a new Key Pair**

**Proceed without a Key Pair**

< Back Continue

## Security details on the server

After launching the DSpace instance, select Security Groups, select the default security group and then the inbound tab in order to enable ports 80, 8080, etc. depending on which port you intend to run DSpace because you may have other services to run on the same server.



The screenshot shows the AWS Management Console interface for creating a security group. The 'default' security group is selected. The 'Inbound' rules tab is active, showing a list of rules including ICMP, TCP, and HTTP. The 'Create a new rule' section is visible on the left.

ICMP	Port (Service)	Source	Action
ALL		sg-04be906c (default)	Delete

TCP	Port (Service)	Source	Action
0 - 65535		0.0.0.0/0	Delete
0 - 65535		sg-04be906c (default)	Delete
23 (TELNET)		0.0.0.0/0	Delete
23 - 8080		0.0.0.0/0	Delete
80 (HTTP)		0.0.0.0/0	Delete
443 (HTTPS)		0.0.0.0/0	Delete
8080 (HTTP*)		0.0.0.0/0	Delete

## Running your instance

Select the Instances link and check the running instance in order to reveal the URL to DSpace

The screenshot shows the AWS Management Console interface for launching an instance. The 'Instances' link is selected in the left sidebar. A table of instances is displayed, with one instance in a 'running' state. The details for the selected instance are shown below the table.

Name	Instance	AMI ID	Root Device	Type	State	Status Checks	Alarm Status	Monitoring	Security Groups	Key I
empty	i-32f75c4c	ami-8d9e31e4	ebs	t1.micro	stopped		none	basic	default	mysd
empty	i-eca0c892	ami-8d9e31e4	ebs	t1.micro	running	2/2 checks p	none	basic	default	mysd
empty	i-aea4d4d0	ami-8d9e31e4	ebs	t1.micro	running	2/2 checks p	none	basic	default	mysd
empty	i-86b0ce18	ami-8d9e31e4	ebs	t1.micro	terminate		none	basic	default	mysd

**1 EC2 Instance selected.**

**EC2 Instance: i-eca0c892**

ec2-23-20-101-201.compute-1.amazonaws.com

Description	Status Checks	Monitoring	Tags
<b>AMI:</b> DSpace 1.8.2 Pre-installed instance. (Ubuntu Natty) (ami-8d9e31e4)	<b>Alarm Status:</b> none	<b>Security Groups:</b> default, view rules	<b>State:</b> running
<b>Zone:</b> us-east-1b	<b>Owner:</b> 283592585689	<b>Subnet ID:</b> -	
<b>Type:</b> t1.micro			
<b>Scheduled Events:</b> No scheduled events			
<b>VPC ID:</b> -			

## Run DSpace

Copy the URL and port on which DSpace is running and paste into a browser. Login and start creating communities and collections just like in any other DSpace instance

The screenshot shows a web browser window with the address bar containing the URL `ec2-23-20-101-201.compute-1.amazonaws.com/password-login`. The browser's toolbar includes a search button, an Ask logo, and social media icons for Facebook, Amazon, YouTube, CNN, and a search icon. The main content area features a large heading "Sign in to DSpace" in orange. Below this is a form with two input fields: "E-Mail Address:" containing `andrewmwesigwa1@gmai` and "Password:" containing a masked password. A "Forgot your password?" link is positioned to the right of the password field. A "Sign in" button is located below the form. To the right of the main form is a sidebar with three sections: "Search DSpace" with a search input and a "Go" button, and a link to "Advanced Search"; "Browse" with a list of links: "All of DSpace", "Communities & Collections", "By Issue Date", "Authors", "Titles", and "Subjects"; and "My Account" with links for "Login" and "Register". Below the main content area is a footer section with the "Digital Initiatives" logo on the left and a paragraph of text on the right: "This website is using Manakin, a new front end for DSpace created by Texas A&M University Libraries. The interface can be extensively modified through Manakin Aspects and XSL based Themes. For more information visit <http://di.tamu.edu> and".

## My Lib@Web 2012 Experience

Search within this community and its collections:

[Advanced Search](#)

### Collections in this community

- [ABCD](#)
- [Digitization](#)
- [Info Resources on WWW](#)
- [Introduction to Repositories and DSpace](#)
- [My Experience in Pictures](#)



### Recent Submissions

#### [Repositories](#)

Goovaerts, Marc (2012-12-18)

### Search DSpace

- Search DSpace
- This Collection

[Advanced Search](#)

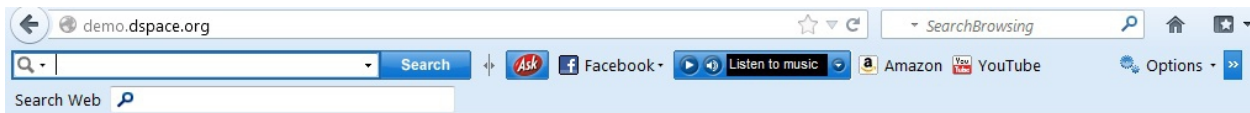
### Browse

- All of DSpace
  - [Communities & Collections](#)
  - [By Issue Date](#)
  - [Authors](#)
  - [Titles](#)
  - [Subjects](#)
- This Community
  - [By Issue Date](#)
  - [Authors](#)
  - [Titles](#)
  - [Subjects](#)

## Evaluation of New Enhancements in DSpace version 3.0

For example: addition of the Creative Commons License option at the submission process

1. Log onto the DSpace demo site: <http://demo.dspace.org>, choose either the XMLUI or JSPUI interface of DSpace
2. Register and login and log out. Then one has to use the provided administrative account to login and convert their newly registered account into an administrative one by adding it to the group of administrators. Thereafter one can log out of the default administrative account so that they can now log in with their own account, thereby enjoying all the administrative privileges of manipulating the user interface. However, this is limited to the client-side administration since it is a demo site with no access to the server-side administration.
3. Make a submission to verify the new additional feature in version 3.0 i.e. the flexible creative commons license addition.



# DSpace 3.0 Demo

Try out the latest version of DSpace!



## Try out DSpace

### Demo Interfaces

This is the the demo.dspace.org test site. It hosts demo installations of all **DSpace web applications**:

- **XMLUI** (Manakin, the XML / XSLT / Cocoon user interface)
- **JSPUI** (traditional JSP-based interface)
- **CAT-PHM Demo**

## Give Us Feedback!

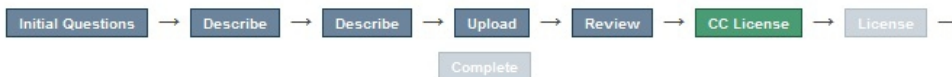
Each page of this DSpace Demo site has a blue "Provide Feedback" button on the right hand side of the page. You can report issues, or suggest fixes just by clicking on that feedback button from whatever page you are on.

You may also search existing issues and vote on them by visiting our DSpace Issue Tracker.

## Where to Ask Questions

Provide Feedback

## Item submission



## License Your Work

If you wish, you may add a [Creative Commons](#) License to your item. Creative Commons licenses govern what people who read your work may then do with it.

### License Type:

### Allow commercial uses of your work? ⓘ

No  Yes

### Allow modifications of your work? ⓘ

ShareAlike  No  Yes

## Search DSpace

Search DSpace

This Collection

[Advanced Search](#)

## Browse

All of DSpace

[Communities & Collections](#)

[By Issue Date](#)

[Authors](#)

[Titles](#)

[Subjects](#)

This Collection

[By Issue Date](#)

[Authors](#)

[Titles](#)

[Subjects](#)

Provide Feedback

## My Account

[Logout](#)

## Way forward in conclusion

It is highly advised that institutions considering a cloud-hosted solution should perform and cost-benefit analysis. Sometimes it may be possible to realize a cut down in costs when receiving a webhosted solution as opposed to paying salary to an IT specialist to manage your DSpace in-house.

On the other hand, an institution that is already running DSpace but has made customizations needs to evaluate whether it is possible to move them into version 3.0. Some of the features requested by the DSpace community have been incorporated in version 3.0. An example is the inclusion of the creative commons license that submitters simply need to customize to their needs. This will be welcomed with much enthusiasm as a way to promote the green road publishing efforts.