Module: An Introduction to DSpace

Module overview:
This module will introduce DSpace, its history, and the DSpace Foundation. The module will introduce what DSpace is and what it can be used for. It will then describe the development of DSpace over time, and talk about the DSpace Foundation which now oversees the running of DSpace. The open source development model used by DSpace will also be described.

Module objectives:
By the end of this module you will:

1. Understand what DSpace is, and what it can be used for
2. Know the history of DSpace
3. Understand the role of the DSpace Foundation, and how it works
4. Know how DSpace software is licensed, and what this allows you to do
5. Understand the open source development model used by DSpace
6. Know how to log in to your course computer

Note
For the practical exercise, please refer to your sheet ‘Local instructions’ for details of the following:

- How to start your course computer
What is DSpace?

DSpace is a platform that allows you to capture items in any format – in text, video, audio, and data. It distributes it over the web. It indexes your work, so users can search and retrieve your items. It preserves your digital work over the long term.

DSpace is typically used as an institutional repository. It has three main roles:

- Facilitate the capture and ingest of materials, including metadata about the materials
- Facilitate easy access to the materials, both by listing and searching
- Facilitate the long term preservation of the materials

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DSpace provides a way to manage your research materials and publications in a professionally maintained repository to give them greater visibility and accessibility over time.

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What are the benefits of using DSpace?

- Some example benefits:
  - Getting your research results out quickly, to a worldwide audience
  - Reaching a worldwide audience through exposure to search engines such as Google
  - Storing reusable teaching materials that you can use with course management systems
  - Archiving and distributing material you would currently put on your personal website
  - Storing examples of students’ projects (with the students’ permission)
  - Showcasing students’ theses (again with permission)
  - Keeping track of your own publications/bibliography
  - Having a persistent network identifier for your work, that never changes or breaks
  - No more page charges for images. You can point to your images’ persistent identifiers in your published articles.

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What can DSpace be used for?

DSpace can be used to store any type of digital medium. Examples include:

- Journal papers
- Data sets
- Electronic theses
- Reports
- Conference posters
- Videos
- Images
What does DSpace look like?

At a very high level, DSpace looks like this:

- Web-based interface makes it easy for a submitter to create an archival item by depositing files. DSpace was designed to handle any format from simple text documents to datasets and digital video.

- Data files, also called bitstreams, are organized together into related sets. Each bitstream has a technical format and other technical information. This technical information is kept with bitstreams to assist with preservation over time.

- An item is an "archival atom" consisting of grouped, related content and associated descriptions (metadata). An item’s exposed metadata is indexed for browsing and searching. Items are organized into collections of logically-related material.
• A community is the highest level of the DSpace content hierarchy. They correspond to parts of the organization such as departments, labs, research centers or schools.

• DSpace’s modular architecture allows for creation of large, multi-disciplinary repositories that ultimately can be expanded across institutional boundaries.

• DSpace is committed to going beyond reliable file preservation to offer functional preservation where files are kept accessible as technology formats, media, and paradigms evolve over time for as many types of files as possible.

• The end-user interface supports browsing and searching the archives. Once an item is located, Web-native formatted files can be displayed in a Web browser while other formats can be downloaded and opened with a suitable application program.
A brief history of DSpace

- The beginning: 2000
  - The DSpace project was initiated in July 2000 as part of the HP-MIT alliance.

- Software releases:
  - Version 1.0 – 8th November 2002
  - Version 1.1 - 8th May 2003
  - Version 1.2 – 13th August 2004
  - Version 1.3 – 3rd August 2005
  - Version 1.4 – 26th July 2006
  - Version 1.5 – 25th March 2008

The beginning - 2000
The DSpace project was initiated in July 2000 as part of the HP-MIT alliance (Hewlett Packard / Massachusetts Institute of Technology). The project was given $1.8 million USD by HP over two years to build a digital archive for MIT that would handle the 10,000 articles produced by MIT authors annually.

Software releases
Releases of the DSpace software have taken places as follows:

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- DSpace version 1.1 - 8th May 2003
- DSpace version 1.2 – 13th August 2004
- DSpace version 1.3 – 3rd August 2005
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The DSpace Foundation

- The DSpace Foundation was formed in 2007 as a non-profit organization to provide support to the growing community of institutions that use DSpace. The foundation’s mission is to lead the collaborative development of open source software to enable permanent access to digital works.
- The DSpace Foundation employs four members of staff

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The DSpace Foundation employs four members of staff:

1. Michele Kimpton – Executive Director (formerly director of the Internet Archive)
   - michele@dspace.org
2. Brad McLean – Technical Architect
   - brad@dspace.org
3. Valorie Hollister – Community Outreach Manager
   - val@dspace.org
4. Lauren L’Esperance – Webmaster (part time)
   - lauren@dspace.org
The aims of the Foundation

The DSpace Foundation has several different core aims

- Develop and manage a strong network of service providers and training resources
- Promote DSpace via a monthly newsletter, website, marketing materials etc
- Build and support an active community of developers and users
- Ensure DSpace integrates using open standards
- Manage and co-ordinate the DSpace platform roadmap and software releases
The community development model

- Open source software
  - BSD licence
- Community development model
  - Source code control repository (SVN)
  - Committers
  - Community welcome to submit bug reports, patches, feature requests
  - Email lists for support

Open source software

DSpace is open source software. That means that you can download, use, and modify DSpace for free. The software is shared under a BSD (Berkeley Software Distribution) licence.

The development model

The code for DSpace is kept within a source code control system (http://dspace.svn.sourceforge.net/viewvc/dspace/). This system allows code to be added or modified over time, whilst maintaining a track of all changes and a note of why the change was made and who made it. This assists with the development of the software and ensures the quality and traceability of the code. Any past version of DSpace can be downloaded from the system in an identical state as originally distributed.

Control of the source code repository is delegated to a small group of ‘committers’ (http://wiki.dspace.org/index.php/DspaceContributors). Only the committers have the ability to change the code and release new versions. The committers work with the wider community of DSpace users to fix bugs and improve the software with new features.
Anyone who wants to is welcome to submit big fixes, new features or feature requests. This can all be done through the SourceForge administrative system (http://sourceforge.net/projects/dspace/).

Support is provided on an informal basis via email lists (http://sourceforge.net/mail/?group_id=19984). There are three lists:

1. DSpace-Tech for technical support
2. DSpace-General for general questions and announcements
3. DSpace-Dev for discussing development issues

For full details of support options see the module ‘How to get Help’.
Practical exercise

- Follow the instructions on your ‘local instructions’ sheet to log in to your course computer

Start your course machine
Follow the instructions on your ‘local instructions’ sheet to log in to your course computer.
Credits

- These notes have been produced by:
  - Stuart Lewis & Chris Yates
  - Repository Support Project
    - http://www.rsp.ac.uk/
  - Part of the RepositoryNet
  - Funded by JISC
    - http://www.jisc.ac.uk/