The DSpace Course

Module - Identifiers
By the end of this module you will:

- Understand what persistent identifiers are, how they work and the benefits to using them in a DSpace repository environment
- Understand what a handle is – the persistent identifier currently used in DSpace
- Have an overview of how to apply for a handle
- Have seen a handle in use
- Understand how to set up the handle server
Persistent Identifiers

- The use of location based identifiers such as the Uniform Resource Locator (URL) often leads to problems in accessibility to resources with time
- Often when accessing a resource via a hyperlink users receive a “404 - page not found” error
- Persistent identifiers are an attempt at solving the issues surrounding resource identification and long term preservation
- A persistent identifier allows the resource to be uniquely identified in a way that will not change if the resource is renamed or relocated
Persistent Identifiers

- This means that a resource can be reliably referenced for future access by humans and software

- Caveat: Persistence is heavily dependant on organisation policy i.e. *persistence of an object is only effective if an organisation maintains and manages this persistence*

- Different systems in use for persistent identifiers
  - Persistent Uniform Resource Locators (PURLs)
  - Digital Object Identifiers (DOI)
  - Handle – Used by DSpace
In a handle system, resource address is identified by a unique handle assigned by a common registration service.

http://hdl.handle.net/2160/568

<table>
<thead>
<tr>
<th>Registration Service</th>
<th>Handle Prefix</th>
<th>Local Identifier</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://hdl.handle.net">http://hdl.handle.net</a></td>
<td>2160</td>
<td>568</td>
</tr>
</tbody>
</table>
Handle resolution: http://hdl.handle.net/2160/568
Practical: Using a Handle

- Navigate to Aberystwyth’s DSpace repository – Cadair
- Select an item from a collection and note the handle address

```
Please use this identifier to cite or link to this item: http://hdl.handle.net/2160/568
```

- Open this address in a new browser window

- The handle will resolve an redirect back to your original item

```
Please use this identifier to cite or link to this item: http://hdl.handle.net/2160/568
```

**Title:** Students' Participation in Mathematics in Wales

**Author:** Cann, Rosemary Olivia

**Supervisor:** Thomas, Malcolm

**Issue Date:** 2008

**Publisher:** Aberystwyth University

**Abstract:** The purpose of this study is to determine whether gender tendencies exist in girls' and boys' attitudes towards mathematics in Wales which may affect their participation in the subject, along with identifying any school or Local Education Authority (LEA) policies or practices which may also influence students' participation. To achieve this, 712 students participated in an attitudinal questionnaire, with participants from 7 schools taking part in group interviews. Observations of mathematics classrooms were conducted in 4 schools. 28 teachers and 9 LEA representatives completed questionnaires to determine the
Configuring the Handles service

- Out of the box, a DSpace installation will use the handle:
  \texttt{hdl:123456789}

- These aren't really Handles, since the global Handle system doesn't actually know about them

- 3 Steps to handle configuration

  \begin{itemize}
  \item Generate Site Bundle
  \item Register for Handle
  \item Setup Handle Server
  \end{itemize}
In order to use handle in DSpace, registration for a prefix with the Corporation for National Research Initiatives (CNRI) is required.

How to register with CNRI?
- Complete the registration form on the CNRI website
- Create & Upload the sitebndl.zip to CNRI (discussed on the next slide)
- Pay a small annual fee

http://www.handle.net/service_agreement.html
Generating the sitebndl.zip

- The Site Bundle is an archive which contains information about your DSpace installation and is used to generate your handle.

- To generate the sitebndl.zip run the command:

  ```
  [dspace]/bin/dsrun net.handle.server.SimpleSetup
  [dspace]/handle-server
  ```

- You will be required to complete a series of questions.

- Once completed the sitebndl.zip can be found:

  ```
  [dspace]/handle-server/sitebndl.zip
  ```

- Complete the registration and upload the sitebndl.zip.
Once registration is complete, a handle should be returned from CNRI.

Edit the `[dspace]/handle-server/config.dct` to include the lines in the "server_config" clause:

```
"storage_type" = "CUSTOM"
"storage_class" = "org.dspace.handle.HandlePlugin"
```

Update all references to `YOUR_NAMING_AUTHORITY` to your assigned handle:

300:0.NA/YOUR_NAMING_AUTHORITY -> 300:0.NA/2097
Updating the Handle Prefix

- Edit `[/dspace]/config/dspace.cfg` and update the handle prefix

```
216 ### Handle settings ####
217 218 # CNRI Handle prefix
219 handle.prefix = 123456789
220 221 # Directory for installing Handle server files
222 handle.dir = ${/dspace.dir}/handle-server
```

- A restart of Tomcat will be required
- If items have already been deposited into DSpace their handle will need updating

`[/dspace]/bin/update-handle-prefix 123456789 YourHandle`
Starting the Handle Server

- Finally start the handle server

  `[dspace]/bin/start-handle-server`

- A script will be required to automate the starting of the handle server upon a server boot

- Once configured the handles should resolve as the practical demonstrated earlier in this module
These slides have been produced by:
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