

Building Digital Library using DSpace

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Prologue

- Kavanagh (2004) explained open source software as "software that must be distributed with source code included or easily available, such by free download from the internet. The source code should be in the same form that a programmer would actually use to maintain it; not for instance, or intermediate code form" .
- Typically, open source software is created and maintained by an international team of developers who have no institutional and national boundaries. However, the degree of support provided by virtual communities of users and developers may not be as well organized as that provided by commercial vendors.

Freedom in OSS

Free Binary code

Free Source code

Free to use

Free to modify

Free to distribute

Free to Share

Free to integrate with other software

Advantages of OSS

- View, change and redistribute source code
- Allow integration between products
- Lower costs
- No vendor lock
- Open source has a large pool of skilled professionals

Disadvantages of OSS

- Lack of personalised support
- Speed of change
- No vendor responsibility
- Customization
- Forking code

Using OSS can get rid of..

- Monopolistic Policies
- Legal hassles due to piracy
- Product activation keys
- Charge for upgrades
- Unethical pricing practices like charging extra for additional modules

Common place for OSS

- Open source software is basically found in the public domain.
- SourceForge (<http://sourceforge.net>) is a web-based source code repository, which provides over 430,000 open source projects and all of these open source projects and serves more than 4,800,000 downloads per day. SourceForge offers free access to hosting and tools for developers of free/open-source software.
- Some similar projects in the public domain are- GitHub (<https://github.com>), Tigris.org (www.tigris.org), BountySource (www.bountysource.com), JavaForge (www.javaforge.com), etc.

OSS for Libraries

Library and information centres and open source software have a common philosophy i.e. "community first". Chudnov (1999) stated that the library community is largely made up of not-for-profit, publicly funded agencies which hardly command a major voice in today's high tech information industry. As such, there is not an enormous market niche for software vendors to fill our small demand for systems.

OSS for Libraries

The areas where library and information centres can see the implementation of open source software are-

- Library Management Software
- Digital Library and Institutional Repository Software
- E-Learning Management Software
- Content Management Software
- Journal Management and Publishing Software, etc.

What is a Digital Library?

- Conversion of content from physical to digital form.
- Creation of metadata to assist in object viewing, management, and preservation.
- Storage of digital content and metadata in an appropriate multimedia repository.
- Client services for the browser, including repository querying and work flow.
- Content delivery via file transfer or streaming media.
- Patron access through a browser or dedicated client.

IR & DL

Institutional Repositories

Are organized around a particular **institutional community**

Often are dependent upon the **voluntary contribution** of materials by scholars for the content in their collection

Are mainly repositories and therefore may only offer **limited user services**

Digital Libraries

May be built around any number of organizing principles (often **topic, subject, or discipline**)

Are the product of a **deliberate collection development** policy

Typically include an **important service aspect** (reference and research assistance, interpretive content, or special resources.)

What is DSpace

DSpace is a platform that

- **capture** items in **any format** - in text, video, audio, and data. It
- **distributes it over the web**. It **indexes** digital items, so users can
- **search** and **retrieve** items.
- **preserves** digital content over the long term.

DSpace is typically used as an institutional repository or digital library. 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

DSpace is a joint project of MIT Libraries and Hewlett-Packard Labs. Now being handled by DuraSpace. DSpace is having BSD licence.

What Materials can go in DSpace

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

- Journal papers
- Data sets
- Electronic theses
- Reports
- Conference posters
- Videos
- Images
- Almost everything...

DSpace Information Model

Communities

- Research units of the organization

Collections (in communities)

- Distinct groupings of like items

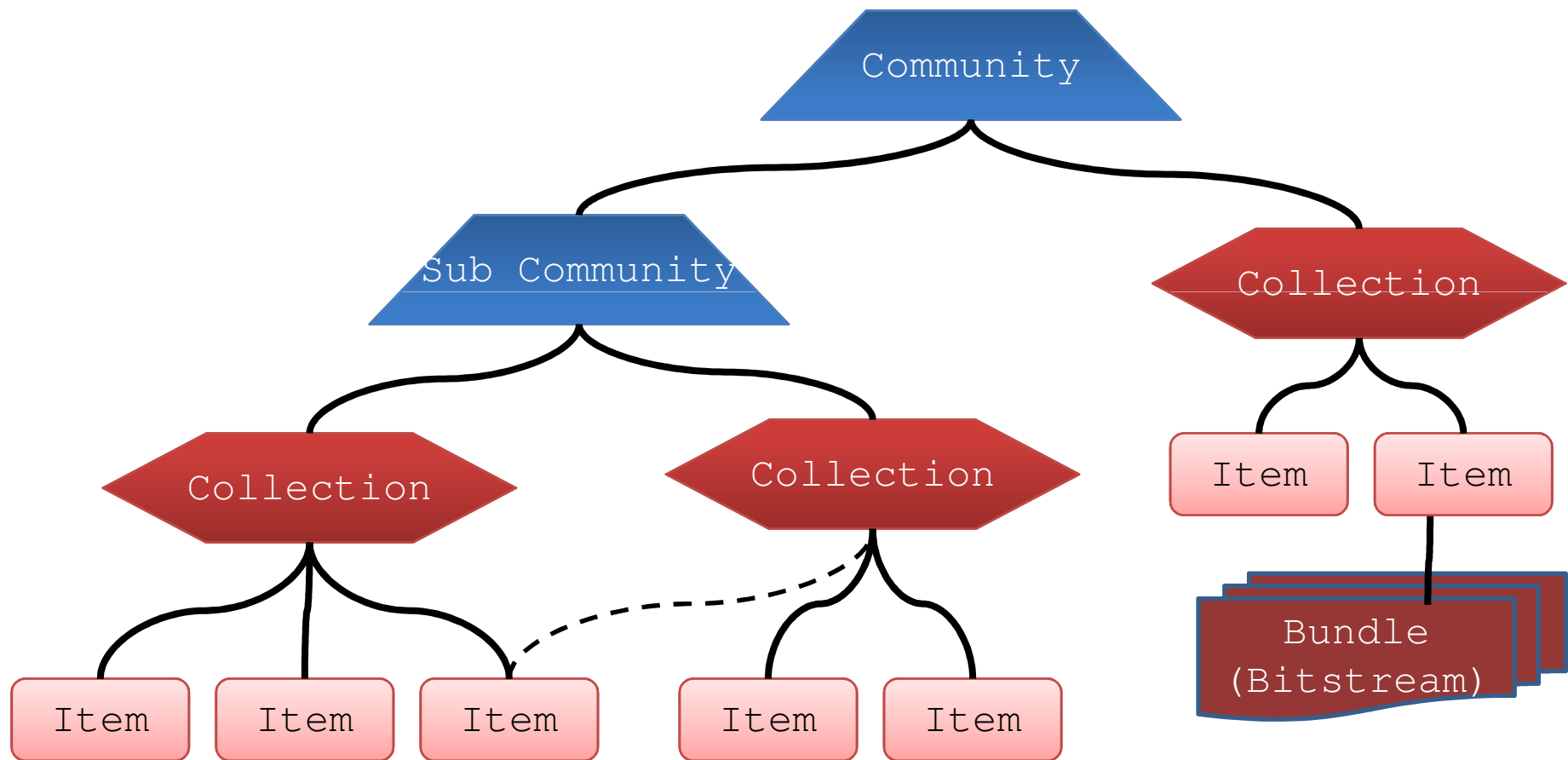
Items (in collections)

- Logical content objects
- Receive persistent identifier

Bitstreams (in items)

- Individual files
- Receive preservation treatment

Community & Collection Relationships



Item Composition

- Metadata (Dublin Core)
- License
- Bitstreams
 - PDF file
 - Word document
 - JPEG picture
 - Executable program
 - HTML file
 - CSS file
 - Audio/ Video file

E-People

DSpace user accounts are called E-people

If permitted, an e-person may:

- Login to the site
- Sign up to receive notifications about changes to a collection
- Submit new items to collections
- Administer collections/communities
- Administer the DSpace site.

Search & Browse

Users may browse any item in DSpace

- Title
- Author
- Date
- Community / Collection
- Subject

Users may search for any item in DSpace based upon any Dublin Core value or a full text search.

OAI-PMH

Enables other sites to harvest metadata from a DSpace repository

Collections are exposed as OAI sets

Only Dublin Core metadata is available

Popular projects in India with DSpace

- Shodhganga
- Shodhgangotri
- Krishikosh
- E-gyankosh
- NISCAIR– National Science Digital Library
- Supreme Court of India– The Judgment Information System
- Most of the IITs, IIMs, and University Institutional Repositories, etc.

Thank You