Comparing E-Print and Fedora Digital Library Software: E-Print or Fedora??? A Better Open Source Repository Platform for Libraries

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Abstract

Judicious system analysis is essential in considering budget allocations to libraries. This paper studies two open-source digital library software namely E-print and Fedora, the present study compares and highlights the similarities among the software. The paper attempts to suggest based on the merits and demerits to enable librarians to take wiser decision in terms of open sources software for a repository.

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Background to the Study

With the advent of information communication technology (ICT), method of accessing information in library has totally change from coming to physical library building to remote access with the help of different digital library software available both commercial and open source software. Digital library in the word of (Smith 1997), defined digital libraries as "controlled collections of information bearing objects (IBOs) that are in digital form and that may be organized, accessed, evaluated and used by means of heterogeneous and extensible set of distributed services that are supported by digital technology". Another definition by (Oppenheim and Smithson 1999) define digital library as "an information service in which all the information resources are available in computerized form and functions of acquisitions, storage, preservation, retrieval, access and display are carried out through the use of digital technologies. Over few decades, different digital library open source software evolved such as Dspace, Greenstone, Keystone, Fedora, E-print etc. The paper will try to talk on similarities and differences of e-print and fedora digital library software. Open source software is computer software that license has granted to the user to download freely, customized, as well as modification, e-print and fedora are all open source software that enable a library to build their collection with free or less cost.

Objective of the Study

The study is aim to explore similarities and differences between two open-source digital library software.

The Evolution of E-Print and Fedora Open Source Digital Library Software

E-print- was created in 2000 as an outcome of Santa Fe meeting that held in New Mexico in 1999 which is the first meeting on open archives initiative. E-print is open source software that was widely accepted by the most libraries which lead to the development of much digital library software. In 24 of January 2007 at Open repositories 2007 conference version 3 of e-print was released and the latest version 3.4.2 was released on 17/07/2020. E-print is open source software that is released under GPL license and it is written in a Perl language.

Fedora: Fedora is a robust, modular, open source repository system for the management and dissemination of digital content. It is especially suited for digital libraries and archives, both for access and preservation. It is also used to provide specialized access to very large and complex digital collections of historic and cultural materials as well as scientific data. Fedora has a worldwide installed user base that includes academic and cultural heritage organizations, universities, research institutions, university libraries, national libraries, and government agencies. In 1997 Sandy Payette and Carl Lagoze created original Flexible Extensible Digital Object Repository Architecture (FEDORA) at Cornell University and it was released first to the public in 2010 as open source software as version 1 and the latest version is 5.0.2 that was also released in 14 February 2019.

Table 1: Features of E-Print and Fedora

Features	E-Print	Fedora
Operating system	Comfortable with Linux, but it can also run on window, Solaris	Its works with Unix or Linux and other OS not Window
Database	MySQL or PosgreSQL	MySQL or PosgreSQL
Server	Apache web 2.0 and above	Apache web 2.0 and above
Programming language	Java and Perl	Java and PHP
User interface	User interface is friendly in such a way that is providing different search facilities, such as browsing in hierarchical subject, restrict search by title author, date etc	Its provide to end user search environment it simple keyword search and advanced searching
Meta data support	Meta data fields are user define. The meta data file is stored in the database ie MySQL whereas the digital content is stored in the file system	Metadata and digital content are both considered data streams of the digital object. Data streams can be stored (a) internally on the digital object XML file, (b) on file system as managed content or (c) on an external Source. One or more metadata sets can be concurrently used, while different file formats can be stored as separate data streams in a digital object. Basic technical metadata are stored for each data stream like MIME type, file size and checksums, ensuring content preservation. Fedora supports versioning of specified Data streams, allowing user to access older data stream instances
Multiple language support	e-print support multiple language	Yes support multiple language
Collection and relation	e-print has no any collection definition all the document or digital object are been organized base on specific fields and the relation can be only defined through URL	Fedora supports collections using RELS-EXT data stream that contains basic relationship ontology. In this data stream the relationships between digital objects are expressed using RDF. Fedora does not provide a mechanism to manipulate these relations
Interoperability	E-print support interoperability OIA-PMH in order to share data with some other digital library, it's also support data export with METS and MPHEG-21.	Fedora also support OIA-PMH and METS XML file to export data.
Customization level	E-prints can be customized and localized at different levels, it enables administrators to change Look and feel (branding), adding new metadata fields, new document types, views, browse and search options. This can be achieved through web interface provided for administrator or by editing source files and reloading entire configuration	It is also fully customizable
Access control	e-print enable registered user to edit the digital object with the help of log in mechanism that is username and password	It supports users and groups authorized for accessing specific digital objects using XACML policies. Authentication is provided through LDAP or for specific IP addresses
Object management	A default web user interface is provided for the creation and editing of objects. Authority records can be used helping the completion of specific fields (e.g. authors, title). Objects can also be imported from text files using multiple formats (METS, DC, MODS, BibTeX, End Note).	Creation of digital objects is feasible using the Administrator client or the batch import utility (XML Files in METS or FOXML format). Metadata addition or editing is provided through a text editor in Administrator client. The same client is used for addition and removal of digital content (as data streams).
Plug in support	e-print support adding some plug in order to extend the functionality of the software which cannot able without the plug in.	Fedora is also supporting plug-in
File format support	Its support MS word, image, PDF, RTF etc	Fedora support multimedia format, like text, audio, video etc

Similarities among E-Print and Fedora

The following are the similarities among e-print and fedora digital library software:

1. They are all open-source software which is freely available
2. They can all run on Linux or Unix
3. The database use is either MySQL or PosgreSQL
4. They support searching and browsing
5. Multiple language support
6. Interoperability is enable
7. Plug-ins support
8. They support access control
9. Digital object management can be with administration client
10. Multi file format support
11. They can be fully customized

Differences between E-Print and Fedora

The following can be seen as the differences between e-print and fedora digital library software:

Table 2.

e-print	Fedora
Window compatibility	While this not
Metadata is user define	Using Dublin core as metadata standard
Perl programming language is use	PHP programming language is use
Metadata and digital object are stored differently	Metadata and digital object are stored in the same database
Collection of a document and a relation cannot be found	Collection and relation of a document are available here

Suggestions

With the aforementioned differences we are recommending the usage of e-print than Fedora open source software, because it is Window compatible and also in term of metadata it is user define. Metadata and digital object are stored differently this will help you in mitigating loose of all the data at the same time, e-print also allow you to store the data without any relation consideration or collection.

Reference

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