

# Managing Electronic Resources through Open Source Software Calibre

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**Abstract**—The new trend of e-collections with new technologies has given readers ample alternatives to experience the novel ways of reading it. Where an ease for users has been produced with e-resources; the challenge arises for managing e-collections has puzzled for libraries. It becomes more complicated when libraries need to develop E-Resource Management Systems (ERMS) not only for carrying off e-collections throughout their life cycle but also for aiding collection-development decision making. Therefore to provide a resolution to libraries based on cost effectiveness for managing e-collections and an easy way for users to utilize it, this paper introduces an open source software Calibre as an ERMS. Calibre helps to acquire, create, manage and also assists user to read open books on any eReader.

**Keywords**—eBooks; eReaders; eCollections; eLibrary; Calibre; DRM; ERMS

## I. INTRODUCTION

The new era of digital distribution came as a beckon in publishing industry which tempted both readers and the libraries. With this course technologies helped the readers to read those e-collections with different types of eReaders.

To be akin with new trends the libraries need to manage their e-collections in a way where its users could utilize the e-resources. The new trend compete the libraries to organize and prepare E-Resource Management Systems (ERMS); such that bringing off eBooks for accessing it on the same time through any device keeping the user profiling needs. Down-the-line the pursuance of user is “Any Book, Any Time, Any Device, Anywhere” which has stumbled new-fangled eBook intimacies [2].

Way back to 1971 the Project Gutenberg, a repository of digital texts, committed to supplying eBooks in open formats, can be read on any device. Such eLibraries only became familiar to masses, nevertheless, with the prevalence of Apple’s iPad, Amazon’s Kindle, and other devices that make reading easy. But the issue is managing the huge eCollection and the uttermost retrieving it from such eCollections. The other problem with such eCollection is most often the eBooks are not usable for reading on many devices due to Digital Rights Management [1].

To sort out the issue of collecting eBooks, managing eCollections and fulfilling user quest this paper discourses

the new trend on E-Resource Management Systems (ERMS) through an Open Source Software “Calibre”.

## II. EBOOKS: FLAVOUR TO SAVOUR

eBooks are nothing but electronic books, where all the content of a published book is accessed digitally rather of being put down in writing. These are made usable in digital form, comprising of text, images, or both, readable on any type of display of computers or other electronic devices. Readable expression can vary dramatically – from a plain text copy of ‘A Midsummer Night’s Dream’ to kindle’s coloured eBook version of ‘The Colour Purple’. eBooks can be purchased online from any store or else can be freely transferred from the Digital Rights Management (DRM) right reserved sites. The best place is Project Gutenberg to get classical and free ebooks which are free from copyright obligations as well as helps the reader to read open books with any eReader viz kindle, iphone, kobo etc. [5].

### A. Digital Rights Management

Digital Rights Management (DRM) is meant to stop sharing the copyright ebooks as well as prevent in making copies of single license purchase eBook to many eReaders at a time. DRM does not stop only from spreading the eBook to others; it also blocks from converting it to use in different format. DRM allows reading eBook using only hardware made by the company for a specific purchased ideal book [4].

### B. Formats and Devices

The quality and essential character of eBook is that one particular eBook can be introduced in a number of different formats. The most common formats of eBooks are:

- *Plain text (.txt)*: this is the most basic of eBooks and comprises the text itself with no headings, no bold or italics, no formatting, colours or pictures. Inspiteof that, this format brings much of benefits; plain text allows for the smallest file size for the content, and any device is able to open and understand it. This makes plain text everlasting for filing away large amounts of information.
- *Rich Text (.rtf)*: this is a step forward from plain text and brings in formatting such as tables, text arranging

and images. All the same, as it is easily editable on a computer and can be read by most devices, it isn't planned to be manipulated by eReaders. Fundamentally it means that while one is able to read it on a Kindle, won't easily be able to change the size of the text.

- *EPUB (.epub)*: substituted the Open eBook format in 2007 as the basic for eBooks. Designed specially to work absolutely with as many devices as possible and to make text display decently irrespective of the size of the text or the size of the screen. Almost every piece of eReader software or hardware is adequate of reading EPUB files, except the Kindle.
- *Portable Document Format (.pdf)*: are grounded on an open format that has been in existence since 1993. Almost all computers, and most eReader devices, are able to open PDFs without a third party program. While this format is great for sharing documents in situations where there would generally be compatibility issues, they aren't good for use as eBooks as text reflow doesn't work very well [3].
- *Mobipocket (.prc/.mobi)*: this format is constituted on the older Open eBook format where the most part is replaced by the EPUB standard. Even so, it's mostly used and popular. Most .prc/.mobi files are found through the Mobipocket web store.
- *Kindle eBook (.azw)*: all books downloaded from the Amazon store to a Kindle or to the Kindle app on computer or mobile device is an .azw file. It's in reality nearly the same as a mobipocket eBook, the only difference is in its indexing system.

### III. CALIBRE: OPEN SOURCE EBOOK SOFTWARE

Calibre is an application program that is used for managing eBook with different files and formats. Its features give a free hand to the user to whether make a personal automated library or make it public through customization. Calibre has brought a new trend in world of eBook management where it does not only manage eBooks but as well take care of the requester by automatically sorting the imported eBook files and allowing quick search for the books in a moment.

Calibre is a multi-platform application, which works on Windows, Mac OS X and Linux. This multi-platform feature allows Calibre to be functional on all computers with different operating systems. The most unique feature it can run on almost all eReader devices, even any android supported mobiles. Calibre has its own set of rules and abide violation of DRM hence works only with open books that do not have DRM.

#### A. Functioning of Calibre

To make an eLibrary the application is freely available to be downloaded from <http://www.calibre-ebook.com/> download. Before setting the frame of eLibrary the user has to decide on which operating system the application need to

be operated. Based on the requirement which is an essential prerequisite the executable file is downloaded in compatibility with the OS. The executable file (installer file) for Windows OS will be .exe file and for OS X it will be .dmg file.

The downloaded installer file is installed with double click to a define path (chosen path in the system folder) where the Calibre is required to be setup. For example the path can be: D:/Users/makeuseof/Calibre Library.

Once the installation starts a "Welcome window" pops up which provides to select the default language in which the entire eLibrary is to be setup and provides the editable path where the installer file to be installed, which looks as Fig. 1.

Once the path for Calibre library is chosen it goes to the next step of deciding the eBook device which should be Genre so that eLibrary can be accessed on any devices and eReaders. The next important step is to make the Calibre a Content Server such that the created eLibrary can be accessed from anywhere.

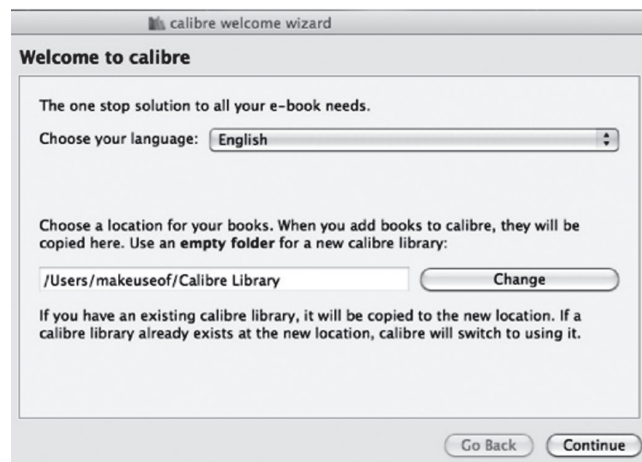


Fig. 1. Welcome Screen of Calibre

The icons at top of the window is the crucial role player for the entire functioning and managing of eLibrary. From left to right as shown in the Fig. 2 the icons are labelled 'Add books', 'Edit metadata', 'Convert Books', 'View', 'Fetch news', 'Save to disk', 'Connect/share', 'Remove books', 'Help' and 'Preferences'. The icon with the books provides information on eLibrary as a whole; and the heart is to support the Open Source movement by donating monetary aids for successful and smooth functioning of the software created by Kovid Goyal.



Fig. 2. Functionary Icons of Calibre

#### B. Adding eBooks to eLibrary

The application is converted to an eLibrary when eBooks are added to its collection and this is done by clicking on the plus (+) sign on the big red book at top left hand corner and

then choose the appropriate option. The added eBook need to be stored in a place which works as a physical database for eLibrary which is usually a folder within the disk space of the system.

Calibre provides many options of adding eBooks viz. add books from a single directory or from sub-directories, which are usually multiple books per directory, assuming every eBook file is a different book. All options of adding books are shown in Fig. 3.

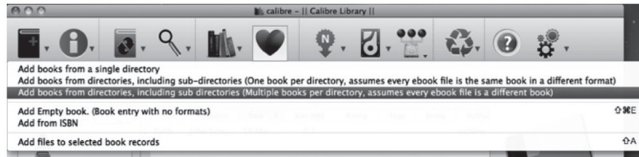


Fig. 3. Add eBooks Process in Calibre

After adding eBooks Calibre creates a copy of all added books in the Calibre library folder created earlier in the define folder within the disk space of the system. Beside this the application also creates a database of its own which can be imported later and hence the original folder can be deleted or can be kept as a backup archive of sorts.

Calibre acts as one-stop personal, automated library. Once the eBooks are added to the library it allows the querter to sort by title, author, series, publish date, the publisher or even the date in which the collection is added and even with the size of the file. All of the added information can be further edited or any missing information can be added later. The added books can be edited by click on the big 'i' in a blue circle in the top left labelled "edit metadata" and select whether to edit a single book or in bulk.

Calibre also permits to add custom tags to eBook files which make the collection to be customized and create a specific groups of books. The eBooks can be rated as per the context or likeness and be further retrieved based on ratings.

When Calibre has finished importing all eBooks the eLibrary in a system looks as shown in the Fig. 4.

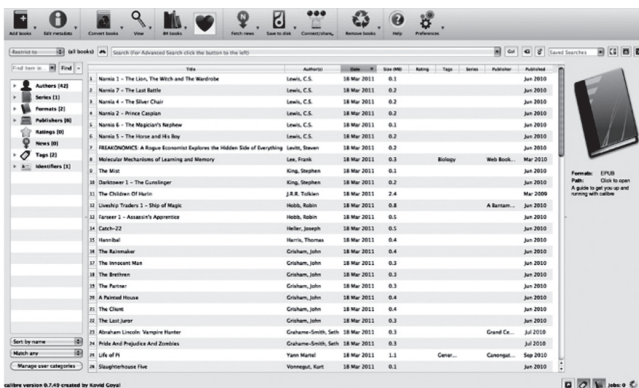


Fig. 4. eLibrary Collection in Calibre

### C. eBooks Format Conversion

As discussed earlier, there are a couple of different eBook formats and those were just the common ones. While most of them are compatible with the vast majority of eReaders but sometimes a few different eReaders that require two different versions to read the files. In this case the original format has to be converted to the required format by the eReader to which Calibre is able to convert non-DRM format to any other format and manage the multiple copies.

Suppose "Neal Stephenson's Snow Crash" is added in the collection with its original form of EPUB format, but to make it readable on Kindle it has to be converted in a format compatible with Kindle; as EPUB format is not supported by the Kindle device. So it can be done by clicking 'Convert Books' Icon (the book with arrows on it), then click on 'Convert individually'.

The input format need not to be disturbed (which is EPUB by default). The only aspect during output which needs to be taken care is that format should be as per device compatibility. In the case of Kindle the output files will be .MOBI. There are drop-downs in the output format so that any desired format can be selected for converting books. Once the selection of converting format of book is decided the application provides an opportunity to change any metadata and the next step is to click OK. Any jobs that are in process or lined up are pointed in the bottom right hand corner of the screen, with a spinning wheel to signify that a job is in process as shown in the Fig. 5.

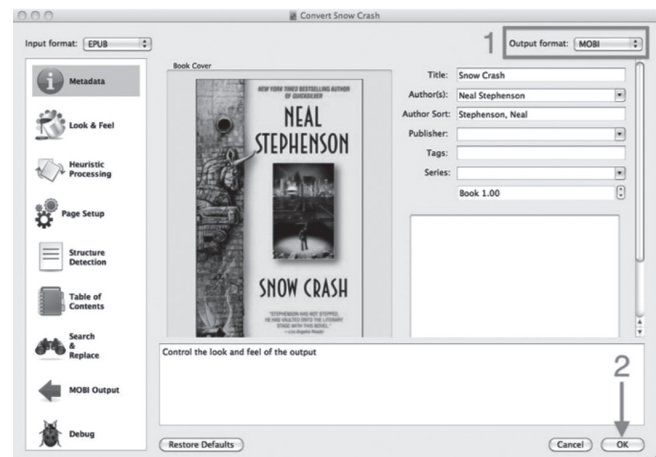


Fig. 5. Converting Books Process in Calibre

Once the process is terminated, the book can be seen in the main eLibrary section where it shows up that both EPUB and MOBI formats are available. Clicking on each one opens up the appropriate version in the built in reader. Clicking where it says "Click to open" will open the folder that contains the eBook files – both the EPUB and MOBI files are kept in the same place.



#### D. Syncing to eReaders

Calibre distinguishes nearly all the popular eReaders by default and allows to select which eBooks to put on which eReaders without having to use another application.

Calibre also has a feature called a 'Content Server', which allows to connect to the Calibre library directly from the eReader itself wirelessly assuming the device has wireless capabilities. Syncing books to eReader is immediate and easy; just plug the device in while Calibre is running and it will detect that it has been connected which is shown in the Fig. 6.

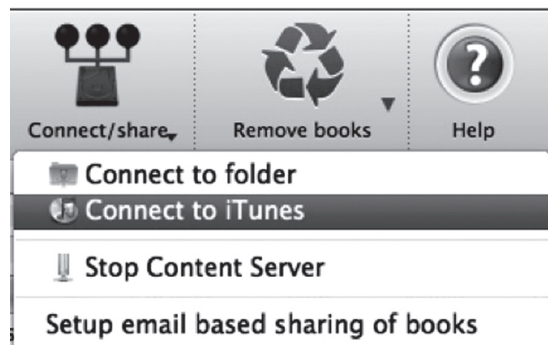


Fig. 6. Sync Process in Calibre

Likewise, if the device can't sync with Calibre properly and it has a memory card, which connect the memory card to the computer and connect to its folder with Calibre. Copying eBooks onto the device is as simple as selecting the books which need to be sync and clicking on "Send to device".

#### E. Grabbing the News

The most useful feature that Calibre has is its power to take the latest articles from nearly any news source and bundle them into a single eBook. The daily news can be scheduled and can be read on any eReaders or can be archived for accessing it offline.

Downloading the eNews begins with clicking the news button which provides a comprehensive list of popular news sources, classified by language and country. When a particular source is selected it opens a new box for scheduling downloads which can be customized as per the requirements. This process needs to be repeated unless all the sources are not selected and then click on 'Save'. This will schedule all the sources to be downloaded at their determined times. Instead, one can manually download any source on an individual basis by selecting it and clicking 'Download now' or all of them at the same time by clicking 'Download all scheduled'.

The schedule options helps Calibre to grab the news from all selected sources as per the requirement and list it in the main eLibrary. The entire process of scheduling and grabbing the eNews can be summarized as shown in the Fig. 7.

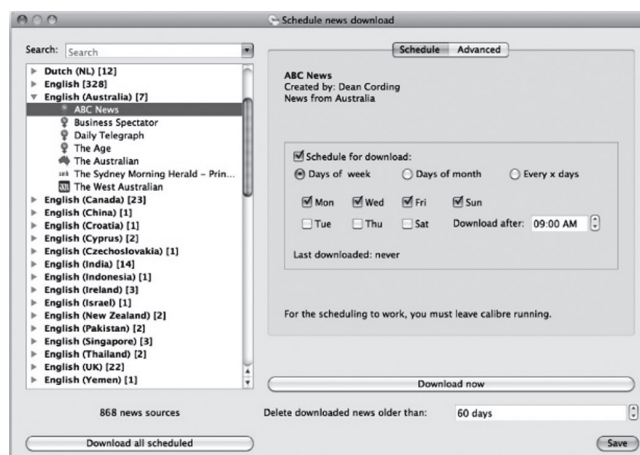


Fig. 7. Grabbing News Process in Calibre

#### F. Hosting eBook Collection: Library Without Wires

Calibre has a built in feature called a "Content Server" which makes a list of books that can be accessed via a web browser by any computer or eReader from local network.

To host the eBook collection the first step is to switch on the Content Server; which is done by clicking on the "Connect/share" button. The application by default provides two option of either start or stop the content server. By clicking 'start' it allows the collection to be accessed through local network with the help of port 8080. And if the collection is not to be shared on local network on need to stop the Content Server by clicking 'stop' which end the sharing of eLibrary.

Once the Content Server is started and it is on "on" mode the next step is to find the local IP address of the system on which the eLibrary is created. The IP address can be located through command line. After getting the IP address the same IP to be put in any browser url space along with a colon and port pointing to 8080 by default and the eLibrary is ready to be hosted without wires. The url will type "http://system-ip-here:8080" into device's browser and the eLibrary will be showcased as shown in the Fig. 8.

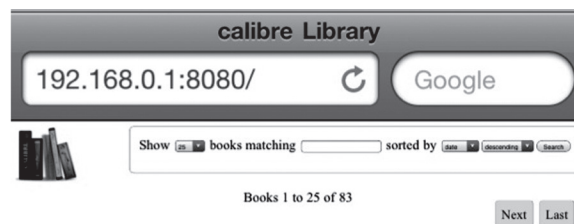


Fig. 8. Hosting eBooks Process in Calibre

With the given IP address or by renaming it to the web domain and hosting it through the web server the eLibrary can be accessed worldwide with keeping the quesser demand of Any Book, Any Time, Any Device, Anywhere.

### III. CONCLUSION

Open Source Software, especially Calibre is a space for everyone, a junction for all who are interested in or inspired by the literary work and innovate to read Any Book, Any Time, Any Device, Anywhere. It not only helps in managing an eLibrary or eCollection or eNews but it allows the user which is a querter for retrieving the items with ease and as per his/her wish. Calibre has brought a new trend of E-Resource Management Systems (ERMS) worldwide without any constraints and hurdles.

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