Simplifying and improving access to the contents of disk images in born-digital collections

Kam Woods
Research Scientist
UNC School of Information and Library Science

CurateGear
January 7, 2015

The Andrew W. Mellon Foundation
BitCurator Access is a two-year Andrew W. Mellon Foundation funded project (October 1, 2014 – September 30, 2016) housed in the School of Information and Library Science at the University of North Carolina at Chapel Hill.

We’re developing open-source software to support access to disk images. Three core approaches:

(1) Tools and reusable libraries to support web access services for disk images

(2) Analyzing contents of file systems and associated metadata (and developing software to support redaction)

(3) Simplifying access to emulated environments
BitCurator Access Core Team

• Cal Lee, PI
• Kam Woods, Technical Lead and Co-PI
• Alex Chassanoff, Project Manager
• Sunitha Misra, Software Developer
BitCurator Access Advisory Board

- Geoffrey Brown, Indiana University
- Mark Evans, History Associates
- Erika Farr, Emory University
- Matthew Farrell, Duke University
- Brad Glisson, University of South Alabama
- Matthew Kirschenbaum, Maryland Institute for Technology in the Humanities
- Susan Malsbury, New York Public Library
- Don Mennerich, New York University
- Alex Nelson, Prometheus Computing
- Michael Olson, Stanford University
- Klaus Rechert, University of Freiburg
- Kari Smith, Massachusetts Institute of Technology
- Bradley Westbrook, ArchivesSpace
- Doug White, National Institute of Standards and Technology
- Carl Wilson, Open Planets Foundation
Today’s Demo:
We’ve developed a prototype to demonstrate integrating digital forensics forensics software libraries and lightweight webservices tools. Drop your disk images in a local or network-accessible location, start up the service, and start browsing a wide range of disk images.

- Most analysis runs server-side (via Sleuthkit and DFXML Python bindings, among others)
- Service is database-agnostic (we use postgres)
- Automatic metadata production (DFXML, PREMIS, others)
- Coming: user authentication, annotations, selectable services

https://github.com/kamwoods/bca-webtools
Main Page

BitCurator Access software tools will assist collecting institutions (libraries, archives, and museums) in providing web-based and local access to born-digital materials held on disk images. BitCurator Access will focus on software that simplifies access to raw and forensically-packaged disk images, allowing collecting institutions to incorporate these objects into access environments in a manner that reflects the original order and relevant environmental context. The use of open source digital forensics software will allow for detailed analysis of file and file system provenance, quality and accessibility of files, metadata in files and the file system, and residual (non-file system) data contained within disk images.

Development Areas

BitCurator Access explores four areas of interest related to accessing born-digital collections:

- Web-based access to raw and forensically packaged disk images
- Transforming and using digital forensics metadata in collecting environments
- Redaction of file items, metadata and hidden data from disk images
- OS and executable virtualization for legacy disk images

Web Access to Disk Images

The bca-webtools repository contains a prototype Flask application that demonstrates the feasibility of providing direct access to the contents of raw and forensically packaged disk images within a web browser.

For more information on the design of the application, along with instructions on how to obtain and build the software, see the BitCurator Access Webtools page.

Redaction

Tools

- BitCurator Access Webtools [Installation Guide]

Support

The BitCurator Community

Get support and speak with members of the team.

Licenses

Software in our GitHub repositories is GPL v3 licensed. This wiki, documentation, and
From Bitstreams to Heritage:
Putting Digital Forensics into Practice in Collecting Institutions

Christopher A. Lee, Kam Woods, Matthew Kirschenbaum, and Alexandra Chassanoff

http://www.bitcurator.net/docs/bitstreams-to-heritage.pdf
From Code to Community: Building and Sustaining BitCurator through Community Engagement

Christopher A. Lee
Porter Olsen
Alexandra Chassanoff
Kim Woods
Matthew Kirshenbaum
Sunita Misra

A Product of the BitCurator Project
September 30, 2014

Notable is a significant decrease in the use of analog media such as music records, which were once a staple of music technology. However, it is also worth noting the resurgence of vinyl records in recent years, as they have gained renewed popularity among music enthusiasts and audiophiles. This trend has led to a revival of the vinyl format, with increased production and sales of vinyl records.

In the digital age, the traditional roles of music distribution through physical media have been replaced by digital platforms and streaming services. This has opened up new possibilities for artists to reach a broader audience and for consumers to access a vast array of music genres and artists. The advent of online music streaming services has also facilitated the discovery of new music and the promotion of independent artists, who may not have the resources for traditional music distribution channels.

The shift from analog to digital music distribution has had significant implications for the music industry, including changes in revenue models, the rise of music influencers, and the evolution of music consumption habits. It has also impacted the way consumers interact with music, with the proliferation of music streaming services offering personalized recommendations and the ability to consume music on-demand.
BitCurator, BitCurator Access and BC Consortium Resources

Get the software
Documentation and technical specifications
Google Group
http://access.bitcurator.net/

People
Project overview
Publications
News
Consortium Membership
http://www.bitcurator.net/

...and on Twitter: @bitcurator