# Using Adobe Acrobat for Electronic Portfolio Development

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**Abstract:** Adobe's Portable Document Format is the ideal container for electronic portfolio reflections connected to digital artifacts. This paper describes the software environment, and then describes the process for converting digital artifacts from many applications into the Portable Document Format, and maintaining a cross-platform, web-accesible, hyperlinked digital portfolio.

## Introduction

There are many tools and strategies that can be used for Electronic Portfolio Development. In the SITE 2000 Conference Proceedings, I outlined a five-stage, five-level model of electronic portfolio development, using off-the-shelf software. In addition to the stages of portfolio development, there appear to be at least five levels of electronic portfolio development, each with its own levels of expectation and suggested software strategies at each stage depending on technology skills of the student or teacher portfolio developer (Barrett, 2000). There are several commercial templates for creating electronic portfolios using PowerPoint and Hyperstudio, books and resources for creating digital portfolios in HTML, and a variety of proprietary software packages. However, there are few resources available on how to publish an electronic portfolios using Adobe Acrobat. This paper outlines strategies for using this software to create an electronic portfolio.

## Adobe Acrobat and the Portable Document Format: the Universal Container

Acrobat has been branded as *ePaper* by Adobe, with the following description on their website:

> Adobe® Portable Document Format (PDF) is the open de facto standard for electronic document distribution worldwide. Adobe PDF is a universal file format that preserves all of the fonts, formatting, colors, and graphics of any source document, regardless of the application and platform used to create it. PDF files are compact and can be shared, viewed, navigated, and printed exactly as intended by anyone with a free Adobe Acrobat® Reader™. You can convert any document to Adobe PDF, even scanned paper, using Adobe Acrobat 4.0 software.

> Adobe PDF is the ideal format for electronic document distribution because it transcends the problems commonly encountered in electronic file sharing. Anyone, anywhere can open a PDF file. All you need is the free Acrobat Reader. PDF files always display exactly as created, regardless of fonts, software, and operating systems. PDF files always print correctly on any printing device.

> Adobe PDF also offers the following benefits:
> - PDF files can be published and distributed anywhere: in print, attached to e-mail, on corporate servers, posted on Web sites, or on CD-ROM.
> - The free Acrobat Reader is easy to download from our Web site and can be freely distributed by anyone. More than 110 million copies have been downloaded or preloaded onto PCs.
> - Compact PDF files are smaller than their source files and download a page at a time for fast display on the Web.
> - Using Acrobat 4.0 software, bookmarks, cross-document links, Web links, live forms, security options, sound, and video can be added to PDF files for enhanced online viewing. (Adobe, 2000)

Adobe Acrobat is based on PostScript, a device independent page description language, introduced by Adobe in 1985 to control printing documents to laser printers. The Portable Document Format (PDF), introduced in 1993, is an advanced version of the PostScript file format, which saves each page is an individual item, incorporating fonts within the document while creating a file that is usually smaller than the originating document. The underlying concept of creating a PDF document is printing to a file (Andersson et, al., 1997).

Creating a PDF file makes it portable across all computer platforms, using the free Reader that can be downloaded from the Adobe web site. Adobe grants permission to publish the Reader Installer on a CD-ROM without written permission from Adobe. There is even a version of the Acrobat Reader that can be pre-installed on a CD-ROM, although most computers are being shipped today with the Acrobat Reader pre-installed on the hard drive. PDF files are WWW compatible, with the PDFViewer plug-in for most web browsers. The latest version of Acrobat can even download web pages with fully functional web links.


## Electronic Portfolios published in Acrobat

An electronic portfolio includes technologies that allow the portfolio developer to collect and organize artifacts in many media types (audio, video, graphics, and text). A standards-based electronic portfolio uses hypertext links to organize the material, connecting artifacts to appropriate goals or standards. Often, the terms "electronic portfolio" and "digital portfolio" are used interchangeably. However, I make a distinction: an electronic portfolio contains artifacts that may be in analog (e.g., videotape) or computer-readable form. In a digital portfolio, all artifacts have been transformed into computer-readable form. (Barrett, 2000)

In my opinion, Adobe Acrobat is the most versatile and appropriate tool to publish an electronic portfolios because this software most closely emulates the 3-ring binder most often used in paper-based portfolios. In my opinion, PDF files are the ideal universal container for digital portfolios. In fact, here is how John Warnock, Co-founder and CEO of Adobe Systems, Inc. defined the Adobe Acrobat Portable Document Format:

> PDF is an extensible form of paper, a hypermedia that is device independent, platform independent, color consistent and it is the best universal transmission media for creative and intellectual assets.

What else is a portfolio but a container for our creative and intellectual efforts? If Adobe Acrobat is chosen as the development software, here are the skills I have found to be important:
1. Convert files from any application to PDF using PDFWriter or Acrobat Distiller
2. Scan/capture and edit graphic images
3. Digitize and edit sound files
4. Digitize and edit video files (VCR -> computer)
5. Organize portfolio artifacts with Acrobat Exchange, creating links & buttons
6. Organize multimedia files and pre-mastering a CD-ROM
7. Write CD-Recordable disc using appropriate CD mastering software OR
8. Post PDF files to a web server

## Structure of my Electronic Portfolio

Here is the process I use to create and then update my electronic portfolio every year. I maintain two separate PDF files: The **Portfolio.PDF** file is organized by the major sections as outlined in my table of contents:

    INTRODUCTION
        Table of Contents
        Introduction to the Reader
        Workload Agreement
        Annual Activity Report
        Self-Review and Standards Achievement
        Vita
    TEACHING SUMMARY
        Curriculum Development
        Course Syllabi
    RESEARCH & CREATIVE ACTIVITY SUMMARY
        Publications
        Grants
        Conference Presentations
    SERVICE SUMMARY
        University Service
        Community & Professional Service
        Summary of Professional Development
        Supporting Correspondence

The **Artifacts.PDF** file contains copies of each artifact I might want to include, organized chronologically with all of the artifacts together for each year. The order of each year's files follows:

    Annual Activity Report
    Syllabi for the year for all courses taught
    Course Content Guides for all new courses developed or revised
    Grants written/received during the year – full text
    Publications for the year – full text

## How I Create and Update my Electronic Portfolio using Adobe Acrobat

1.  **Organizing files and folders** - My hard disk drive is really my working portfolio. Once a year, I "mine" my hard drive for those "gems" that I want to include in my artifacts file.

    1.1. During the year, collect appropriate artifacts in a folder called, "new items" or in a folder named for the year. I keep a "Working Folder" to store all of the artifacts for inclusion in the portfolio that have been converted into Acrobat format. Sometimes I add contemporaneous reflections to the artifacts using the Notes tools in Acrobat.

    1.2. Set up a new folder for the working files for the new year. Save all of the new summary files in the new current year folder if you want to maintain source documents for prior years (the prior year folders can be tossed later, if hard disk space is an issue). Once a PDF file is inserted into the main Portfolio.PDF or Artifacts.PDF document, I store them into a folder that I call "PDF files" inside the current year's folder.

2.  **Contents of portfolio pages**

    2.1. At the end of the summer, I write up my Annual Activity Report (AAR). Each component of the report becomes the foundation for updating the separate sections of the portfolio. The formatting of each section matches each section of my Vita.

2.2. From my Annual Activity Report (AAR), copy the publications, conference presentations, and any other appropriate information into my Vita. Print the Vita to PDF.

2.3. Update major section summary pages (Teaching, Research, Service)

2.4. From my Annual Activity Report (AAR), copy the contents of each section to the Summaries of each type of activity (i.e., classes taught, different types of service, publications, conference presentations, etc.) after adding a heading for the current year. This results in a summary of the different aspects of my work for all years. I recommend organizing these summaries in chronological order, adding the current year's record at the end. That way, if links have been made to artifacts, those links would remain in the same place when the new information is added at the end.

2.5. Convert these summary pages to PDF (all of these items are drawn from the AAR):
- ❑ Summary of Courses Taught
- ❑ Overview of Curriculum Development
- ❑ Summary of Research & Creative Activity
- ❑ Summary of Publications
- ❑ Summary of Grants Received including paragraph Abstracts
- ❑ Conference Presentations
- ❑ University Service
- ❑ Professional Service and Affiliations
- ❑ Community Service Summary (including School District In-Services)
- ❑ Paid Consulting
- ❑ Summary of Professional Development
- ❑ Supporting Correspondence (see description #3.6)

3. **Organizing the PDF files**

3.1. Take last year's PDF portfolio, save with another name. Create a new folder to hold the new portfolio and place this new file into that folder.

3.2. I maintain my artifacts in a separate PDF file. Make a copy of that file, but keep the same name if you want the old links to that file to work. Move that new file to the new portfolio folder.

3.3. Replace the appropriate pages in the portfolio, updating them with the new versions. This will leave the links intact. Don't Delete Pages and Insert Pages; the links will disappear. The only pages to insert should be those where the page counts exceed the previous year when the additional information is added.

3.4. Review the artifacts that might be included in the portfolio file (in my case, the current year's syllabi), and copy those pages to the end of the Artifacts file. From prior experience, the cross-document links from the Portfolio PDF file to individual pages in the Artifacts PDF file will be correct only if pages are not inserted in the middle, but rather at the end of the document. I insert a divider page before the beginning of the new year's files.

3.5. While the Artifacts file may be filed in chronological order, the Bookmarks can be organized by artifact type, so that each major heading can have sub-headings that link to individual documents.

3.6. An important component at the end of my portfolio is a collection of correspondence that I have received during the year that support my portfolio. Many of these items are e-mails and have been converted to PDF at the time they were received, and are stored in the folder described in Step 1. I create a summary list of these pieces, convert that document to PDF, and insert into the portfolio. This is the only page that I delete and insert, and then need to update the links and the bookmarks. I also make links to each individual piece of correspondence.

4. **Adding Reflections** (Reflections turn *artifacts* into *evidence* of achievement)

   4.1. When creating the PDF version of an artifact, sometimes I add a reflection to the file, using Acrobat's Annotations Tools.

   4.2. Update the Introduction to the portfolio, convert to PDF, and replace the older version in the Portfolio file. If necessary, link from the Table of Contents and re-link Bookmark.

   4.3. Write up my summary reflection for the year, convert to PDF and insert into the Portfolio file. If necessary, link from the Table of Contents and re-link Bookmark.

   4.4. Review the document that contains the Standards I have chosen, and update the reflections from the prior year. I keep my ATE reflections in a FileMaker Pro database. Convert to PDF and replace the older version in the Portfolio file. If necessary, link from the Table of Contents and re-link Bookmark.

5. **Fine-tuning the finished files before publication**

   5.1. Check all Bookmarks or make new ones.

   5.2. Check all links or make new ones.

   5.3. If file size is not an issue, create all Thumbnails.

   5.4. If you want the PDF files to open with the Navigation Pane showing, select File Menu -> Document Info -> Open and select the appropriate Initial View.
   5.5. Before finalizing the PDF files, do a "Save As…" using the same name to compress the file. If saved too many times, the file becomes very large.

   5.6. If the files are to be posted in a public space, such as a web server, I save the files with Normal Security, to prevent printing, copying, adding notes, making any changes or form fields. I also assign a password required to change those security provisions. Be sure to remember the password, or keep another version without the security provisions.

6. **Adding Multimedia**

   6.1. I review the portfolio for standards or reflections that could benefit from a multimedia reflection. I also review the video clips that I have collected over the year. I create short video clips to illustrate a component of my portfolio (try to keep each clip less than 30 seconds).

   6.2. Save the files in Quicktime cross-platform format or AVI format. Store in a "Movies" folder inside the current portfolio folder. Once stored in a place that will not change, create links from the Portfolio document to the appropriate video file.

   6.3. If appropriate, I will create a tour of the portfolio using CameraMan or another Screen Recording software package, narrating the overview for a novice viewer, and saved in QuickTime or AVI format.

7. **Publishing the Portfolio**

   7.1. Using a CD-mastering program, I set up a temporary 650 megabyte partition and copy the all appropriate files and folders in the current portfolio folder to that partition. Organize the windows the way they should appear when the CD is loaded in the CD drive (Macintosh only). Write the CD.

   7.2. Post the appropriate files to a web server. I post only the Portfolio.PDF file, not the Artifacts.PDF file to a web server. I also use the Normal Security so that the document cannot be printed, pages or text/graphics copied, etc. I do not include the video clips with the online PDF files, since the links to video do not work over the Internet.

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