



Digitization Guidelines

October 2015
Reviewed and Updated Annually

Distilled from the August 2010 document "Technical Guidelines for Digitizing Cultural Heritage Materials: Creation of Raster Image Master Files" created by the Federal Agencies Digitization Initiative (FADGI) - Still Image Working Group.
<http://www.digitizationguidelines.gov/guidelines/digitize-technical.html>

Introduction

The South Carolina Digital Library (SCDL) views digitization not just as a means of increasing access to a physical collection but also as a preservation method. Digitization protects original historical documents and analog records from further deterioration and damage because it eliminates repetitive handling. Therefore, quality digitization is critical to the success of any digital project. These digitization guidelines adhere to international standards and best practices for digitization, for instance the [Federal Digitization Guidelines Initiative](#), and if followed, will produce high quality archival images useful for both access and preservation.

Different types of items require different digitization settings. Books, manuscripts, photographs, slides, and negatives all have different digitization needs. Therefore it is important to establish scanning best practices and guidelines based on the item format.

Media Types to be Digitized

Most media that needs to be digitized can be broken down into 5 general categories. These categories are:

Printed Text: Any mechanically printed or typed material, such as books, pamphlets, etc.

Manuscripts: Any hand written material, including but not limited to journals, letters, etc.

Photographs: Any color or black and white, printed photographs

Slides: Any color or black and white mounted slides

35mm Negatives/Transparencies: Any color or black and white film transparencies

If you have the need to digitize any media not covered by the above 5 categories, please contact your SCDL regional contact for information and guidelines specific to your project.

Master Files

These guidelines provide technical approaches to the creation of digital (pixel-based) master files. In creating master files, the primary objective is to produce digital images that look like the original items and to create a “reasonable reproduction” without enhancement. However, practice may vary from institution to institution regarding the amount of processing or editing that is performed on master files.

In general, master files have the following attributes:

- Maintain the essential features and information of the original
- Represent the best copy produced by a digitizing organization, with best defined as meeting the objectives of a particular project or program
- Represent digital content that the organization intends to maintain and manage for the long term
- Are created primarily for the production of a range of copies used for specific purposes (such as derivatives and duplicates)
- Document the image at the time of scanning, not what it may once have looked like if restored to its original condition

Institutions may create one or more digital master copies depending on the nature of the originals and the intended purpose of digitization. Digitization should be use neutral and should not geared for any one specific output. If digitization is done to recommended image parameters and all other requirements as described in these guidelines, we believe the master image files produced should be usable for a wide variety of applications and outputs.

If digitization is done to meet our minimum standards, the master image files should be usable for many access applications, particularly for web usage and reproduction requests. Generally, given the high costs and effort for digitization projects, we do not recommend digitizing to anything less than SCDL's minimum standards.

While there are several files formats that might be appropriate as master image files, including TIFF, JP2 and even versions of RAW files (CR2, NEF, DNG), the most widely used and recommended are uncompressed TIFF files¹. Therefore, **SCDL recommends that master image files be created as TIFFs**. TIFF is a lossless format and is excellent for preservation.

Access Files

The term "access file" refers to the digital file that is served up to the public through your digital repository or digital library system. Access files require a smaller file size to facilitate rapid load times on your website. Also, since computer monitor resolution ranges from 72-96 pixels per inch, these access files can and should be a lower resolution than your master files.

You can create access files from your master files using the batch processing capabilities of Photoshop or Photoshop Elements.

SCDL recommends access image files be created as JPEGs. JPEGs have a very small file size, but are not a lossless format and therefore are not suitable as master files.

Resolution

The term "resolution" is defined as "an imaging system's ability to resolve finely spaced detail". When we talk about image resolution, we generally use descriptive terms like sharp, blurry, in or out of focus.

Image resolution refers to the number of pixels per inch in the image. A higher image resolution generally equates to higher quality image. This is true because more pixels, which are basically just bits of information, are being stored in the same amount of space. The lower the resolution, the less information overall that you store in the digital file. However, it is worth

¹ Sustainability of Digital Formats, Planning for Library of Congress Collections, accessed 29 September, 2015. http://www.digitalpreservation.gov/formats/content/still_preferences.shtml

noting that more isn't always better. Digitization at a high resolution will not improve upon the quality of the item digitized.² Digitizing at higher resolutions also yields larger file sizes. Larger file sizes can dramatically increase your need for digital storage. Therefore, it is important to find the right balance when choosing the appropriate resolution for your scanning project.

Printed text generally require a lower resolution than photographs, slides, and negatives because these documents typically do not have as much visual information that needs to be captured. Photograph can contain rich visual material in color, texture and lighting and therefore can require higher scanning resolutions.

The below information will help you determine the best resolution to capture high quality, archival digital images while not creating unnecessarily large digital files.

Media Type	Minimum Digitization Specifications
Books/Typed Pages (≥5"x8") Smaller sized books (<5"x8")	300 ppi, 24-bit RGB color 450 ppi, 24-bit RGB color
Manuscripts/handwritten documents (≥8"x10") Smaller sized manuscripts (<8"x10")	450 ppi, 24-bit RGB color 600 ppi, 24-bit RGB color
Photographs (black and white)	600 ppi, 16-bit grayscale
Photographs (color)	600 ppi, 24-bit RGB color
Slides (black and white)	2100 ppi for 35mm slides, 16-bit grayscale
Slides (color)	2100 ppi for 35mm slides, 24-bit RGB color
Film Negatives or Transparencies (black and white)	2100 ppi for 35mm film, 16-bit grayscale 800 ppi for 4"x5" originals, 16-bit grayscale
Film Negatives or Transparencies (color)	2100 ppi for 35mm film, 24-bit RGB color 800 ppi for 4"x5" originals, 24-bit RGB color

If you feel a project would best be scanned below any of the above minimum digitization specifications, please confirm this with your regional scanning center coordinator prior to starting the project.

² Digitizing a simple, printed page of text (usually printed at 150-300 dots per inch or dpi) at an extraordinarily high resolution can actually yield lower quality image then if the item was digitized at an appropriate resolution. The same is true of an old newspaper that used a 200 dpi halftone. Digitizing these items at a high resolution won't produce a higher quality image than the original. What tends to happen is that the flaws on the page (the discolorations in the paper, the tear on the corner) become more obvious.

A Word on Naming Conventions

What you name your digital files should not be an afterthought and should be kept as useful and platform-independent as possible. To minimize any conflicts, file names should be:

- Lowercase
- Contain no spaces
- Contain no special characters except underscores (__) or dashes (-)

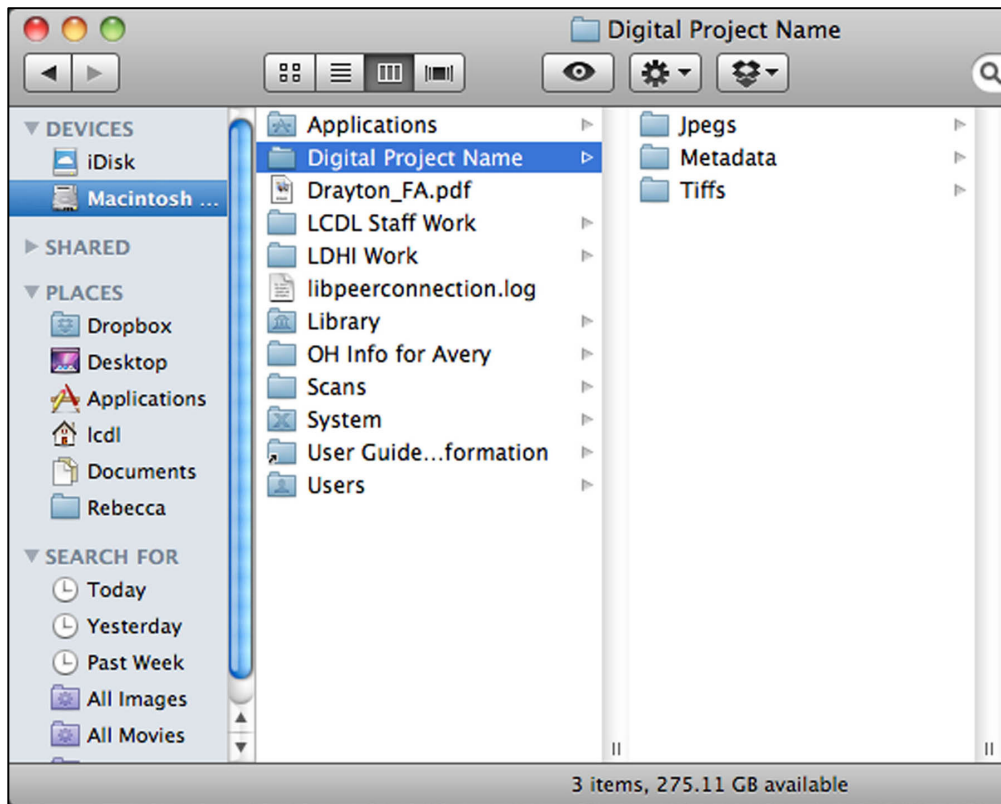
Examples:

The Charleston Museum is scanning a collection of plantation photographs. An example of a good naming convention for those files might be “**cm_plantations_001.tiff**”. This file name identifies the institution, the collection and the order of the images.

The College of Charleston is digitizing Box 1 of the Drayton Papers (MSS#0152). An example of a good naming convention for those files might be “**cofc_mss0152b1_001.tiff**”. This file name identifies the institution, the manuscript and box number of the archival collection and the order of the images.

Keep Your Files Organized

It is always good to keep your digital project and the resulting digital files organized. We suggest that you do this through the simple file hierarchy illustrated by the image below.



Above you see that I have a folder for my digital project. You should name this folder after your digital project. Inside this folder I have folders for my tiff files, my jpeg files and my metadata. If I were making thumbnail images for this project, I would have a folder titled "Thumbs" present as well. That way every file has a home. And that's a very good thing.

Digitization Specifications At A Glance

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Master Files: High quality, digital file that look as close to the original item as possible. Master files are saved as TIFFs.

Access Files: the digital file that is served up to the public through your digital repository or digital library system. Access files are JPEGs that are created from Master Files.

File Naming Conventions

- Easily identifies material
- Lowercase
- Contain no spaces
- Contain no special characters except underscores (_) or dashes (-)

File Organization

- Keep your files organized! See the folder hierarchy below.
- "Project Name" folder
 - "tiffs"
 - "jpegs"
 - "metadata"
 - "thumbs" (optional)