



Module 10

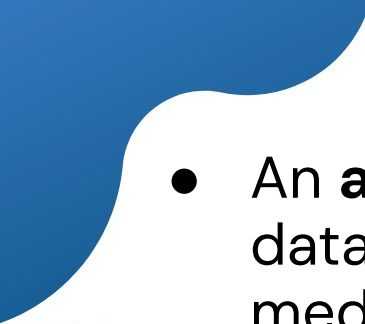
Attachments





What is an Attachment?



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- 
- An **attachment** is any digital file linked to a specific data record to provide supplementary information or media.
 - This could be a photograph of a specimen, a scanned permit document, a field notes PDF, or an audio recording.
 - Instead of storing the file directly in the database, which would make it large and slow, Specify saves the file to a dedicated **Web Asset Server** and stores only a reference to that file in the database record.
- 
- 



Habitus, lateral

File

Title

MIME type

Type

Subtype

Orientation

Subject Part

Creator

Make Public ☒

Download Open in New Tab  Collection Object

Close Save

Attachments



☒ Generate La

CT Scan

Inventory

GUID



Supported Tables

- 
- Accession
 - Agent
 - Borrow & Loan
 - Collecting Event
 - Collection Object
 - Preparation
 - DNA Sequence
 - Field Notebook
 - Gift
 - Locality
 - Permit
 - Reference Work
 - Storage
 - Taxon
- 

Adding an Attachment

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1. [Through the User Interface](#): Drag and drop files directly onto the attachment form.
 2. [Batch Attachment Uploader](#): Add many attachments at once to existing records based on matching identifiers in the filenames.
 3. [WorkBench Import Attachment](#): The WorkBench can be used to add an attachment to new records in bulk.
 4. [Via the API](#): Using the APIs, attachments can be uploaded in bulk.
 5. [Via SQL](#): Using SQL, attachments can be linked to existing files.
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Adding an Attachment

Collection Object Attachments



1

/ 1



CO

6

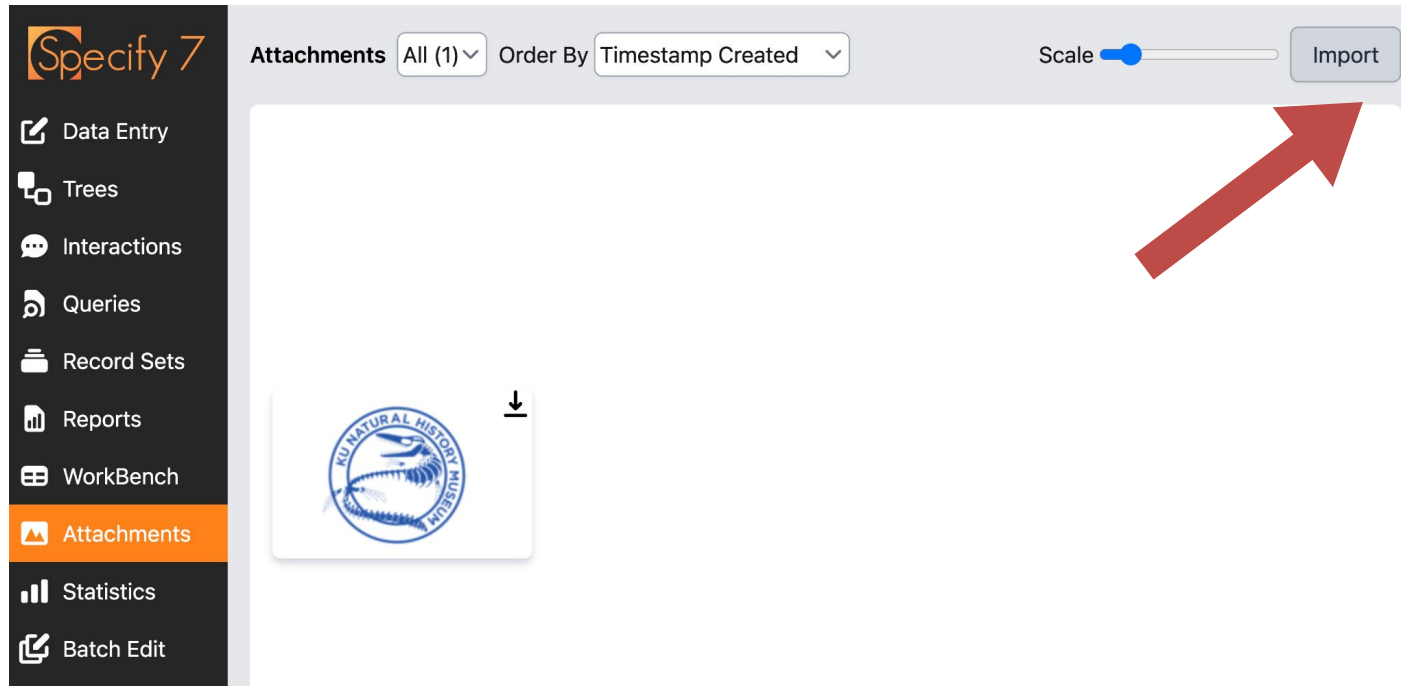
Choose a file or drag it here

Batch Attachment Uploader

- **Validation and Upload:** Validate, upload, and roll back attachments as needed.
- **Record Disambiguation:** Automatically disambiguate records when a filename matches multiple records.
- **Upload Control:** Ability to stop uploads or rollbacks at any point.
- **Network Resilience:** Upload and rollback processes are tolerant of network issues and client-side crashes.
- **Metadata Attachment:** Attach remarks to the metadata of the dataset.
- **Numeric Field Matching:** When using numeric fields (e.g., Catalog Number) for matching, filenames like 0000000001.jpg, 1.jpg, and 0001.jpg are treated as equivalent.

Batch Attachment Uploader

If you have permission, you can go to the **Attachments** page and click **Import** in the top left to access this tool.



Batch Attachment Uploader (Supported Fields)

- Collection Object / Catalog Number
- Collection Object / Alt Cat Number
- Taxon / Full Name
- Storage / Full Name
- Collecting Information / GUID
- Collecting Information / Collector Number
- Loan / Loan Number
- Accession / Accession Number
- Gift / Gift Number
- Preparation / Bar Code
- Preparation / GUID
- Borrow / Invoice Number
- Treatment Event / Field Number
- Exchange In / Exchange In #
- Exchange Out / Exchange Out #
- Reference Work / GUID
- Reference Work / Title
- Locality / Unique Identifier
- Locality / GUID
- Permit / Permit Number
- Agent / GUID
- Collecting Trip / Trip Name
- Deaccession / Deaccession Number

Batch Attachment Uploader (Interface)

Files must be **selected** to upload, as they are temporarily held in your browser tab.

CO Attachments 

Choose files or drag them here

Collection Object / Catalog Number 

Validate

Save

Upload

Roll Back

Total files: 12

Selected file	File Size	CO Catalog Number	Progress
305.jpeg	219K byte	000000305 	
308.jpg	225K byte	000000308 	
309.jpeg	28K byte	000000309 	
311.jpeg	31K byte	000000311 	
313.jpg	767K byte	000000313 	
314.jpg	121K byte	000000314 	
315.jpg	275K byte	000000315 	
322.jpg	5K byte	000000322 	
336.jpg	197K byte	000000336 	
339.jpg	204K byte	000000339 	
350.jpg	179K byte	000000350 	
Euphorbia subsalsa.jpeg	213K byte	Incorrectly Formatted	

Batch Attachment Uploader (Matching Behavior)

Files must be **selected** to upload, as they are temporarily held in your browser tab.

CO New Attachment Data Set Mon Jan 08 2024

Choose files or drag them here

Collection Object / Cat #

Validate

Save

Upload

Roll Back

Total files: 8 Please reselect all files before uploading.

Selected file	File Size	CO Cat #	Progress
001.jpg	127K byte	000000001	Uploaded
002.png	55K byte	000000002	Uploaded
003.jpg	139K byte	000000003	Uploaded
004.png	176K byte	000000004	Uploaded
005.jpg	156K byte	000000005	Uploaded
006.png	117K byte	000000006	Uploaded
007.jpg	130K byte	000000007	Uploaded
008.png	140K byte	000000008	Uploaded

Multiple Matches. Click To Disambiguate

Disambiguate Multiple Record Matches

- ☒ persistentifolia (in Archytaea)
- ☐ persistentifolia (in Euphorbia)

Cancel

Apply

Apply All

999999999 - 1.txt (No File)

0B

No match

Skipped: No match

Not correctly Formatted.txt (No File)

0B

Incorrectly Formatted

Skipped: Incorrectly Formatted

Field Format Matching

When matching a *numeric* field, such as a **9-digit Catalog Number**, you must include **all leading zeros** in the filename to ensure it matches the format exactly when adding attachments to a single record.

You are uploading 3 attachments to a Collection Object with the catalog number 000493839.

Filename	Status
000493839.jpg	Correctly Formatted
000493839_dorsal.jpg	Correctly Formatted
000493839_frontal.jpg	Correctly Formatted

If you upload a **single** attachment, Specify will treat file names such as 0000000493839.jpg, 0493839.jpg, and 493839.jpg as equivalents. If you upload **multiple** attachments, you will need to follow the format exactly.

Filename	Status
493839.jpg	Correctly Formatted
493839_dorsal.jpg	Incorrectly Formatted
493839_frontal.jpg	Incorrectly Formatted

Form Appearance

Attachments

Cit 6

☒ Generate Label on Save

Generate Label

DNA 0

Cit 0

CT Scan

Inventory

Edited By

GUID

Habitus, lateral



Habitus, lateral

File

File

MIME type

Type

Subtype

Orientation

Subject Part

Creator

Make Public ☒

Download

Open In New Tab

Collection Object

Cancel Save

Attachments

Collection Object Attachments (4) +

Attachment







Collection Object Attachments (4) +

Attachment



Habitus, lateral

File

File

MIME type

Type

Subtype

Orientation

Subject Part

Creator

Make Public ☒

Download

Open In New Tab

Cit 0

☒ Generate Label on Save

Generate Label

GUID

Last Edited By

Created

Modified



WorkBench Attachments



WorkBench Attachments

Attachments can be brought in through the WorkBench by clicking the Import Attachments button then selecting the attachments to import.

WorkBench Data Sets (0)

Currently no Data Sets exist. Use "Import a file" or "Create New" to make a new one.

Documentation 

Choose files or drag them here

Cancel

Import Attachments

Import File

Choose files or drag them here

WorkBench Attachments



Once you've selected the attachments, assign a name to the data set.

Choose files or drag them here

Choose files or drag them here

Selected file: Multiple files selected

Name for New Data Set:

Attachments

Import Attachments

Preview Dataset

Attachments
100.jpg
000002002c.JPG
000002002d.JPG
000005112_1x.jpg
000005112_2x.jpg

WorkBench Attachments

Choose a base table or an Existing WorkBench Plan.

Select a Base Table with Attachments

Acc

Accession

Agt

Agent

Bor

Borrow

CE

Collecting Event

CO

Collection Object

CvE

Conservator Event

Dea

Deaccession

DNA

DNA Sequence

EI

Exchange In

☐ Show All Tables

Cancel

Choose Existing Plan

WorkBench Attachment View Options

Attachments can be viewed as a sidebar or a dialog.

CO Data Set: Attachments (3) Meta Data Tools Data Mapper Attachments Validate Results Upload Revert Save

	Att Attachments	CO Cat #	CO Prev/Exch #	CE Field Number
1	100.jpg			
2	000002002c.JPG			
3	000002002d.JPG			
4	000005112_1x.jpg			
5	000005112_2x.jpg			
6	000005844x.jpg			
7	000005857_1x.jpg			
8	000005857_2x.jpg			
9	000006797x.jpg			
10	000006852_2b.JPG			
11	000006852x.jpg			
12	000007457b.JPG			
13	7457.JPG			
14	000010025.JPG			
15	000010025b.JPG			



Changing rows in the WorkBench will change the attachment in both views



Downloading Attachments



Download Attachments One at a Time



From Individual Records

Collection Object Attachments + -



000010519.JPG

File 000010519.JPG
Title 000010519.JPG
MIME type image/jpeg
Type
Subtype
Orientation
Make Public ☒

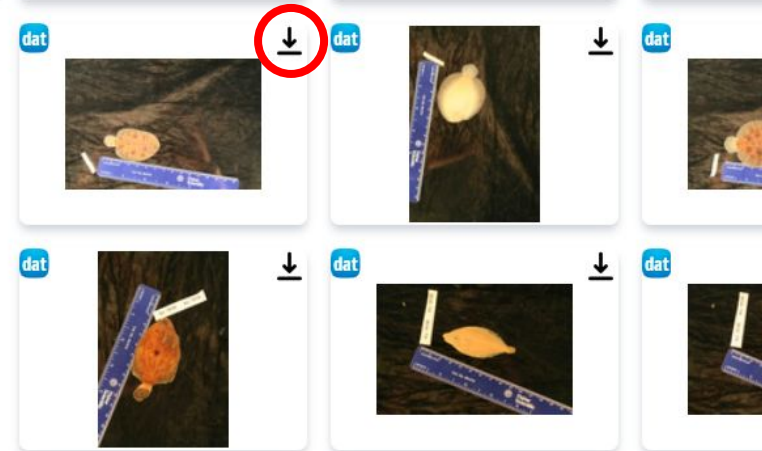
Download

Open In New Tab

Close

From the Attachment Panel

Attachments All (8,766) Order By Timestamp Created



Download Attachments in Bulk

From Query Results
or Record Sets

Query Results: Collection Object

Cat # 000000001 Accession # 1029 Prev/Exch #

Cataloger Taylor, Edward Cat Date Full Date mm/dd/yyyy

▼ Determinations + -

Attachments (2)

CO [Image] [Download Arrow] CO [Image] [Download Arrow]

Download All Close

Prepared Date Voucher Storage Remarks Preparation Attachments

mm/dd/yyyy Jar Head only 0

Delete 0 Close Save



Web Asset Server

Specify Attachment Server



Installation

We recommend that an IT administrator install the **Web Asset Server** via **Docker**.

It only needs to be networked to an attachment directory, given a randomly generated unique attachment key.

```
services:
  asset-server:
    restart: unless-stopped
    build:
      context: ./
    init: true
    volumes:
      - "attachments:/home/specify/attachments"
      # If you need to use the settings.py file, uncomment the following line.
      # On container start-up, this bind mount will overwrite the changes made
      # to the settings file during the Build process (e.g., parsing and
      # "applying" the environment variables)
      # - './settings.py:/home/specify/settings.py'
    environment:
      - SERVER_NAME=host.docker.internal
      - SERVER_PORT=8080
      - ATTACHMENT_KEY=test_attachment_key
      - DEBUG_MODE=true
    ports:
      # Instead of exposing the host machine's port, you can add this container
      # to an existing Docker network (e.g., one that the Specify 7 instance is
      # on)
      # See:
      # https://docs.docker.com/compose/how-tos/networking/#use-an-existing-network
      - "8080:8080"

volumes:
  attachments:
```

See <https://github.com/specify/web-asset-server>

How does it work?

When an attachment is uploaded to Specify, it is added to the database as a set of attachment records.

- This pair of records includes:
 - *A table attachment* (CollectionObjectAttachment)
 - *A base attachment* (Attachment)
- The attachment file *itself* is stored in a directory on the **web asset server**.
 - This can be either a mounted directory or cloud object storage.



Delete

How does it work?

You can build a simple query on any record to return both the **original filename** and the **attachment location**.

- The “Original Filename” shows the name of the file when it was originally uploaded.
- The “Attachment Location” shows the auto-generated name of the file on the web asset server.

Results: (1)

Batch Edit

Create CSV

Create Record Set

Browse In Forms

	 Cat #	 Original Filename	 Attachment Location
☐	 000029499	C:\Users\abentley\Desktop\Large pictures_For Andy\29499.JPG	sp64504250189672699317.att.JPG

How does it work?

Specify builds **URLs** to obtain assets from the Web Asset Server differently depending on the context.

- **Base URL** (`baseUrl`): comes from the attachment server settings (e.g., `https://assets-test.specifycloud.org`) for the Specify 7 instance.
- **Collection** (`coll`): the collection key for the database (e.g., `sp7demofish`).
- **Filename** (`filename`): the server-side stored filename from each Attachment record (from the `attachmentLocation` field in the attachment record directly)
- **Type** (`type`): T for thumbnails/previews used in the gallery, originals use O. If T, you must add the scale component.
- **Scale** (`scale`): The size of the thumbnail to generate. Only used for thumbnails.
- **Download Name** (`downloadname`): You can specify the download name for the image.

How does it work?

Putting this all together, you can grab any full resolution attachment by constructing the following:

```
${baseUrl}/fileget?coll=${coll}&type=0&filename=${filename}
```

This will get you the thumbnail, scaled to your preference:

```
${baseUrl}/fileget?coll=${coll}&type=T&filename=${filename}&scale=123
```

Original: <https://assets-test.specifycloud.org/fileget?coll=sp7demofish&type=O&filename=sp64504250189672699317.att.JPG&downloadname=29499.JPG>

Thumbnail: <https://assets-test.specifycloud.org/fileget?coll=sp7demofish&type=T&filename=sp64504250189672699317.att.JPG&scale=123>

Thumbnails



- Thumbnails are generated **on-demand** by grabbing the original attachment and downsizing it to the resolution specified.
 - If a thumbnail at that resolution already exists, it will simply display it. If not, it will create a new one.
- Supported for:
 - JPEG, GIF, PNG, TIFF, and PDF files



Attachments on the Asset Server

On the server side of things, there are two primary directories:

- **originals** stores the full resolution, uncompressed images that were uploaded to Specify
- **thumbnails** stores the “thumbnail-ified” images, usually named the same as the original with a suffix indicating the resolution (e.g. _123 in the filename indicates it is a 123x123 thumbnail).

How does Specify 7 work with the Web Asset Server? [🔗](#)

[Documentation](#) [Technical Docs](#) [Specify-7](#) , [Members-only](#)



Grant [👤](#) Staff

7 [🔗](#) Sep 2

[📖](#) This article describes how attachments in Specify are linked to attachments on the [Web Asset Server](#).

Linking an Attachment to the Source

When an attachment is uploaded to Specify, it is added to the database as a set of attachment records (in the `attachment` table and the joining attachment table, in this case `collectionobjectattachment`). In this example, I uploaded an attachment for a Collection Object with the catalog number `29499`:

[📖](#) Collection Object Attachment: <http://biimages.biodiversity.ku.edu/static/ichthyology/originals/sp64504250189672699317.att.JPG> [⚙️](#)

29499.JPG [⚙️](#)



File Name `C:\Users\abentley\Deskt`

Title `29499.JPG`

Date Imaged

File Created Date `2013-02-26` [📅](#)

Copyright Holder

Copyright Date

Attachment Location `sp64504250189672699`

is public ☒

License

Credit

Mime Type `image/jpeg`

Remarks

[Download](#) [Open in New Tab](#)

[Delete](#) [Clone](#) [Add](#) [Save](#)

Citation: University of Kansas Biodiversity Institute: KUBI Ichthyology Collection [KUBI Ichthyology Collection](#).

[Occurrence Detail 656963381](#)

You can build a simple query to show the attachment location, which is what Specify uses to

Learn More



<https://discourse.specifysoftware.org/t/how-does-specify-7-work-with-the-web-asset-server/2817>

