

IIF Image and Manifest Creation

Guides and Tools

Ramiro Ortiz, Maja Marinkovic, Maja Bartl, Gerda Koch, Odo Benda
Angewandte Informationstechnik Forschungsgesellschaft Graz

**EuropeanaTech 2023 - IIF workshop on developing shared
tooling**

October 10th

KB, National Library of the Netherlands



Funded by the
European Commission

**OPEN
UP!** Opening Up the Natural History Heritage
for Europeana

OpenUp!



OpenUp! Natural History
Aggregator
NATURAL HISTORY



TRUSTED PARTNER

Presenter: Ramiro Ortiz

AIT Angewandte Informationstechnik
Forschungsgesellschaft mbH



Opening up the Natural History Heritage for Europeana

- Since 2011
- Natural History Institutions, Biodiversity Research Centre, European Botanical Gardens
- Biggest data provider with over 11 Mio. data records
- Data Transformation & Enrichment: ABCD(EFG), DarwinCore, Lido, MARC21, EDM, DublinCore
- Dark Aggregator (open-up.eu)
- **Botanischer Garten und Museum Berlin & AIT Graz**

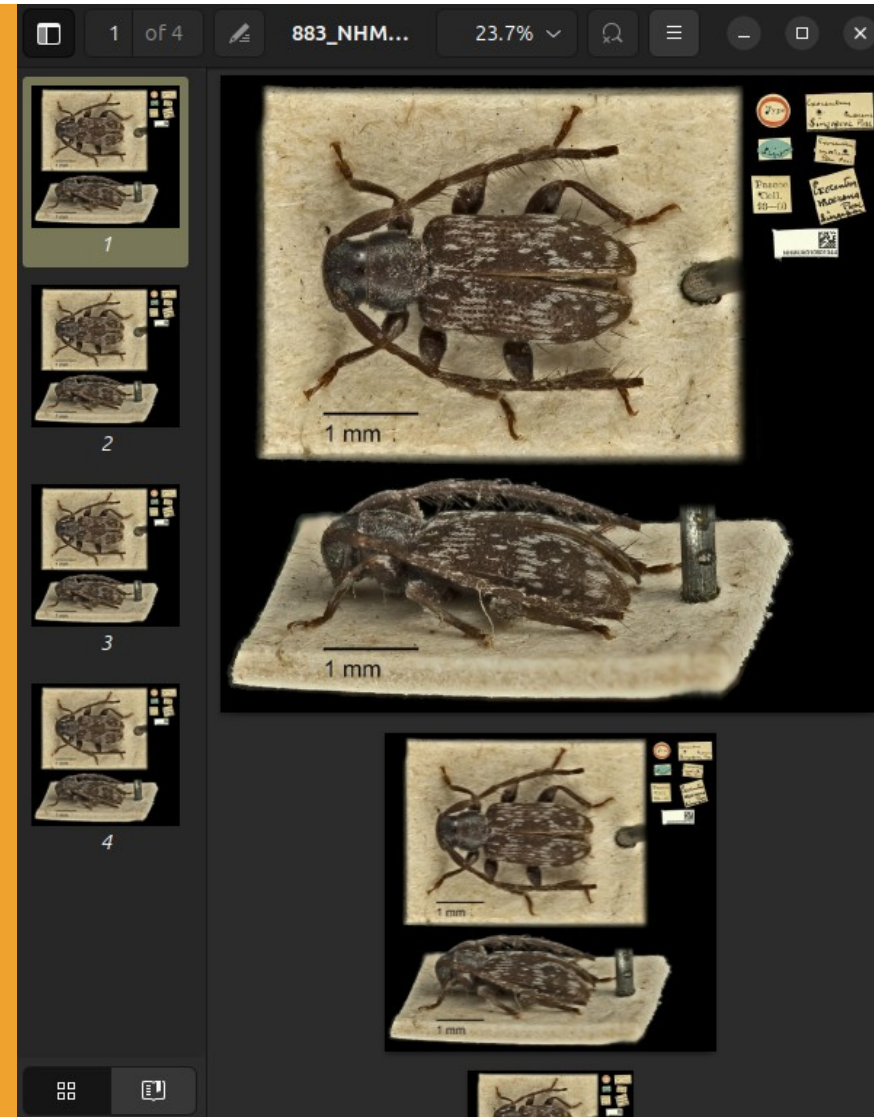


Overview

1. IIF Image Conversion Guide
2. Use Case ad 1
3. IIF Manifest Creation Guide
4. Use Case ad 3

IIIF Image Conversion Guide

Introduction and Specifications





1 IIF Image Conversion Guide

Goal

- ▮ To make digital **images IIF compliant** (conversion to multi-resolution format)
- ▮ To produce a complexity reducing, automated workflow for the **Image API**
- ▮ To create a **user-friendly guide**



1 IIF Image Conversion Guide

Why?

High amount of pictures

=

high amount of time for
IIF image conversion



1 IIIF Image Conversion Guide

What do
you need?

- Operating system; Linux Debian, i.e. Ubuntu
- Web server: Apache2
- Image server: IIPImage Server
- Shell scripts: **iiif-install.sh**, **iiif-image-converter**





1 IIF Image Conversion Guide

Source

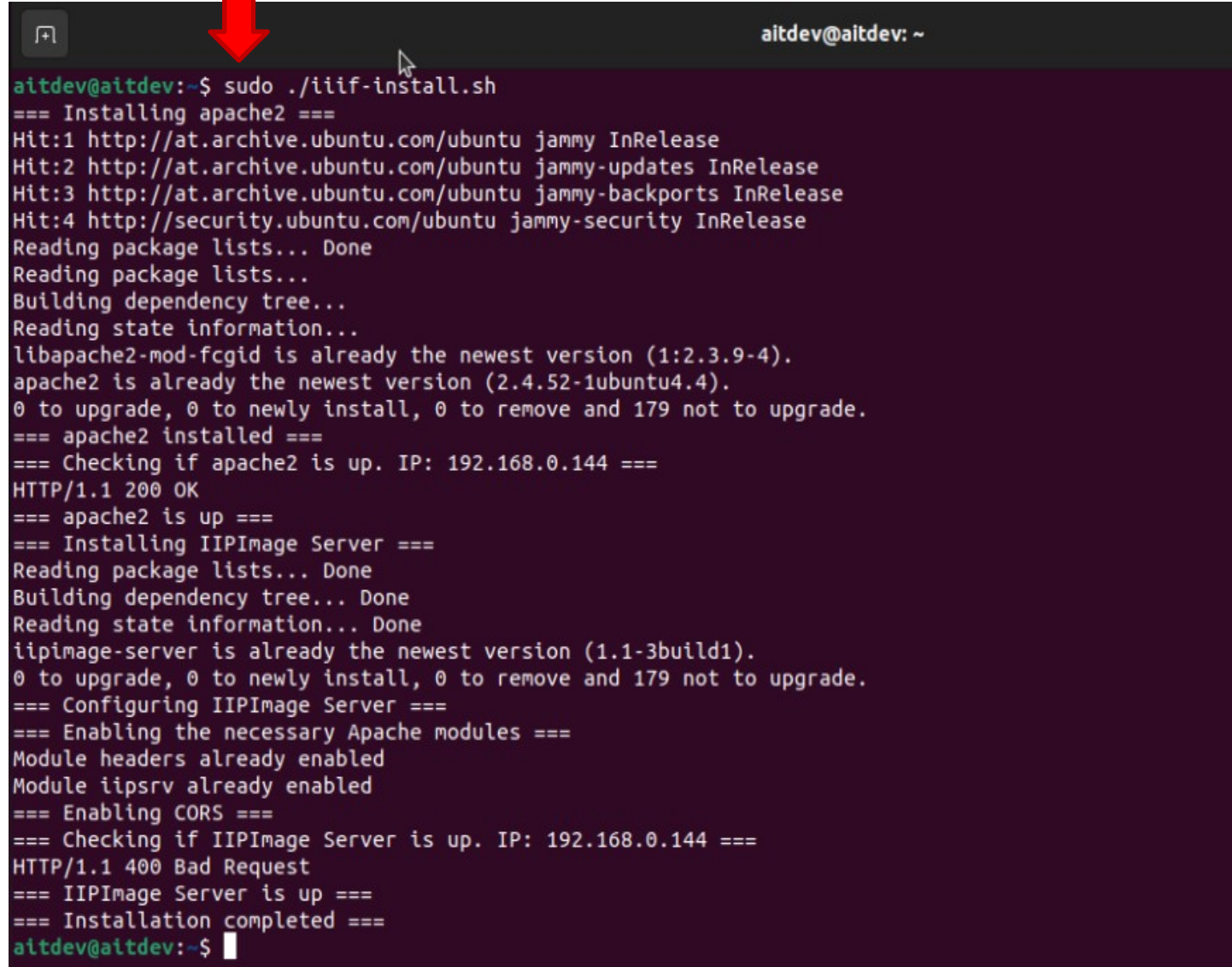
*Image Conversion Guide and Use Case
Training:*

▫ <http://openup.ait.co.at/iiif-image-conversion-guide>

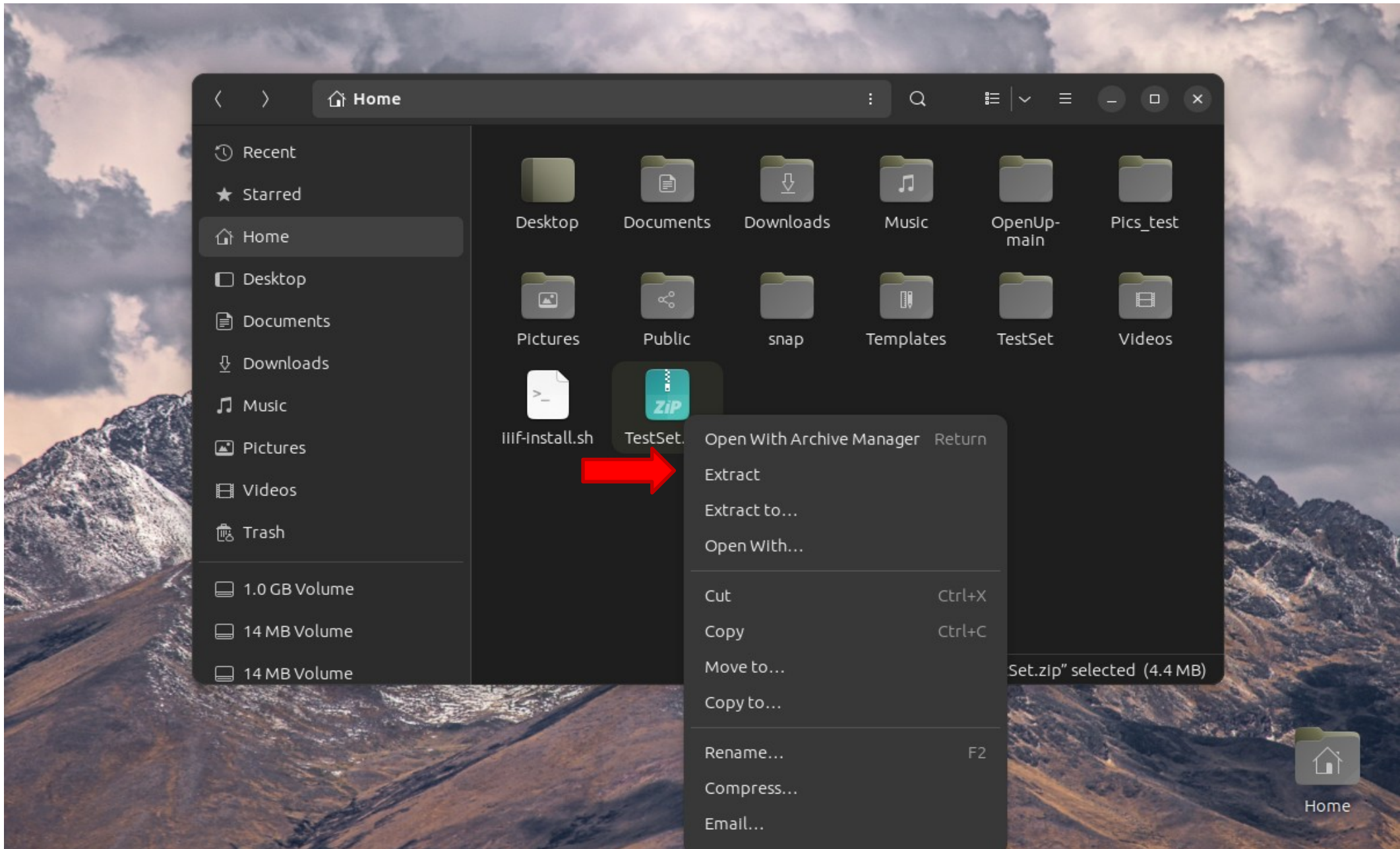
L



2 Use Case



```
aitdev@aitdev:~$ sudo ./iiif-install.sh
=== Installing apache2 ===
Hit:1 http://at.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://at.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://at.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu jammy-security InRelease
Reading package lists... Done
Reading package lists...
Building dependency tree...
Reading state information...
libapache2-mod-fcgid is already the newest version (1:2.3.9-4).
apache2 is already the newest version (2.4.52-1ubuntu4.4).
0 to upgrade, 0 to newly install, 0 to remove and 179 not to upgrade.
=== apache2 installed ===
=== Checking if apache2 is up. IP: 192.168.0.144 ===
HTTP/1.1 200 OK
=== apache2 is up ===
=== Installing IIPImage Server ===
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
ipimage-server is already the newest version (1.1-3build1).
0 to upgrade, 0 to newly install, 0 to remove and 179 not to upgrade.
=== Configuring IIPImage Server ===
=== Enabling the necessary Apache modules ===
Module headers already enabled
Module ipsrv already enabled
=== Enabling CORS ===
=== Checking if IIPImage Server is up. IP: 192.168.0.144 ===
HTTP/1.1 400 Bad Request
=== IIPImage Server is up ===
=== Installation completed ===
aitdev@aitdev:~$
```

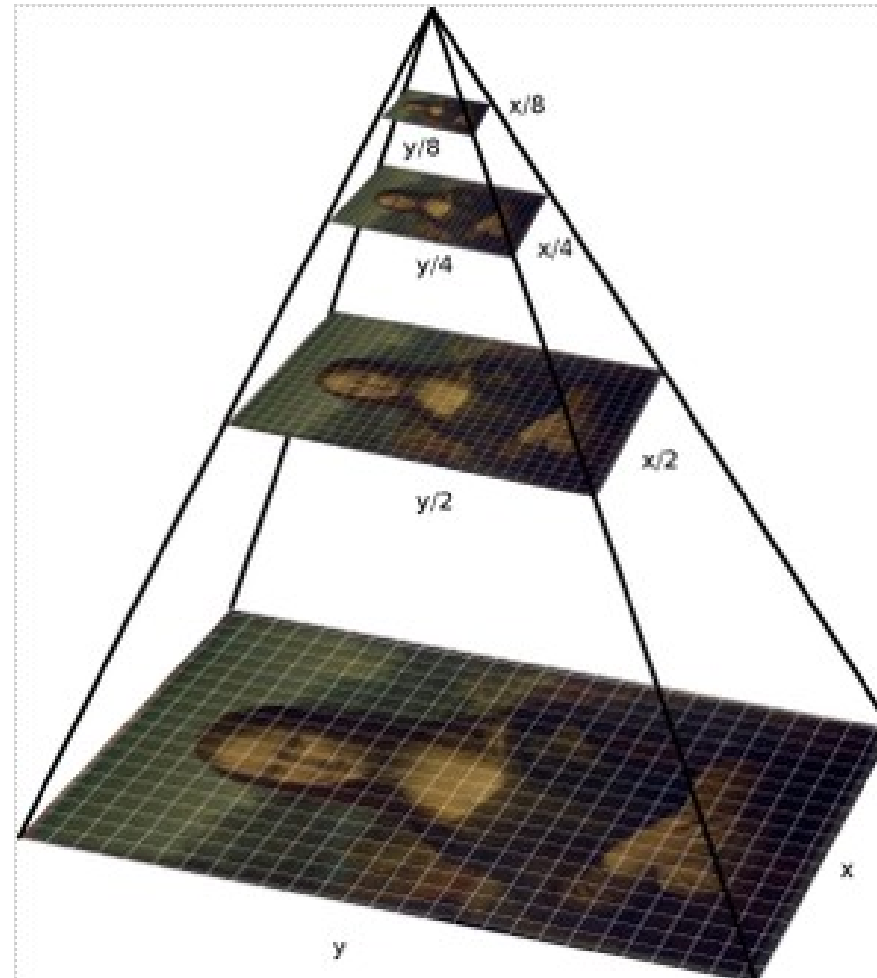


IIIF Workshop on developing shared tooling

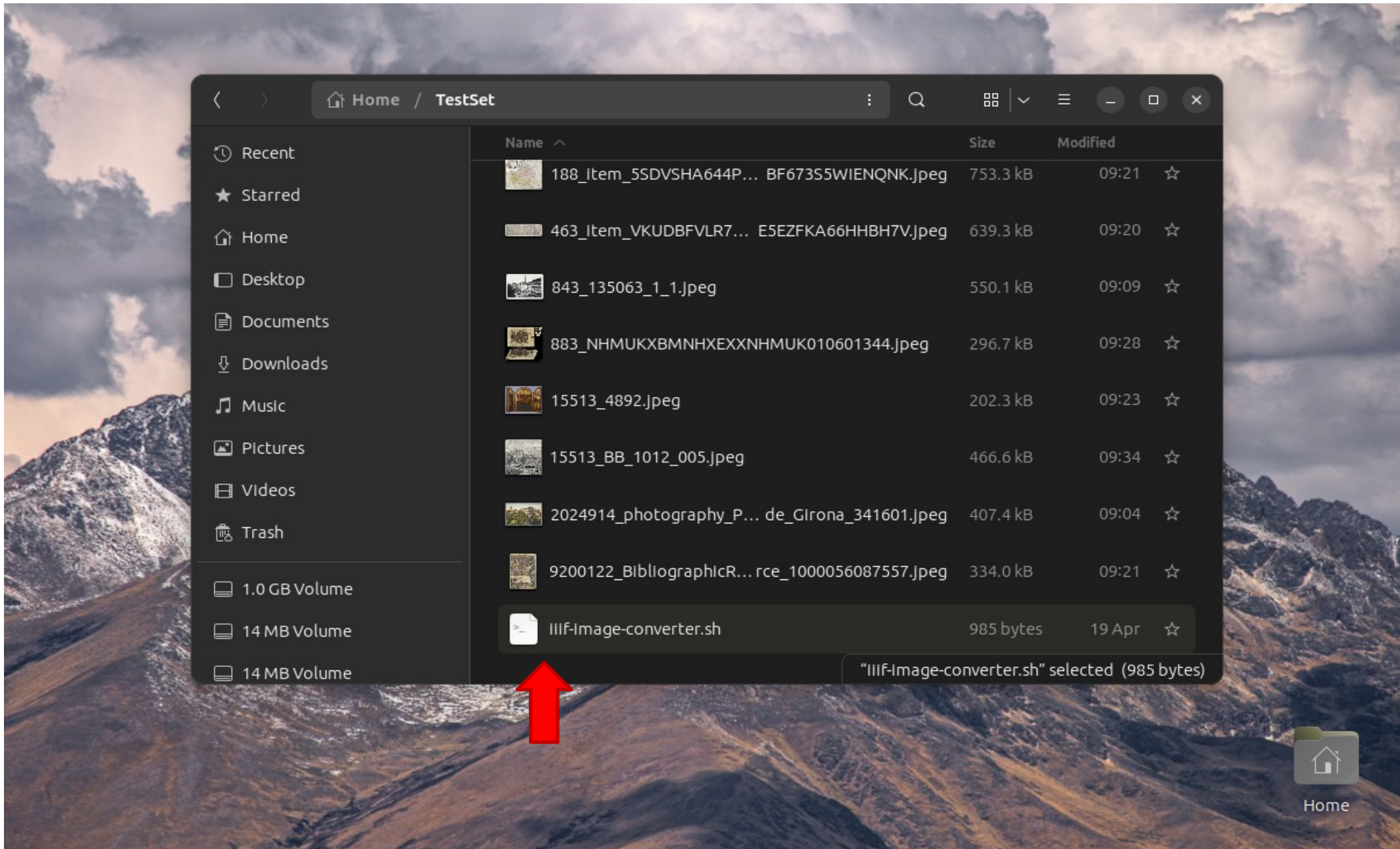


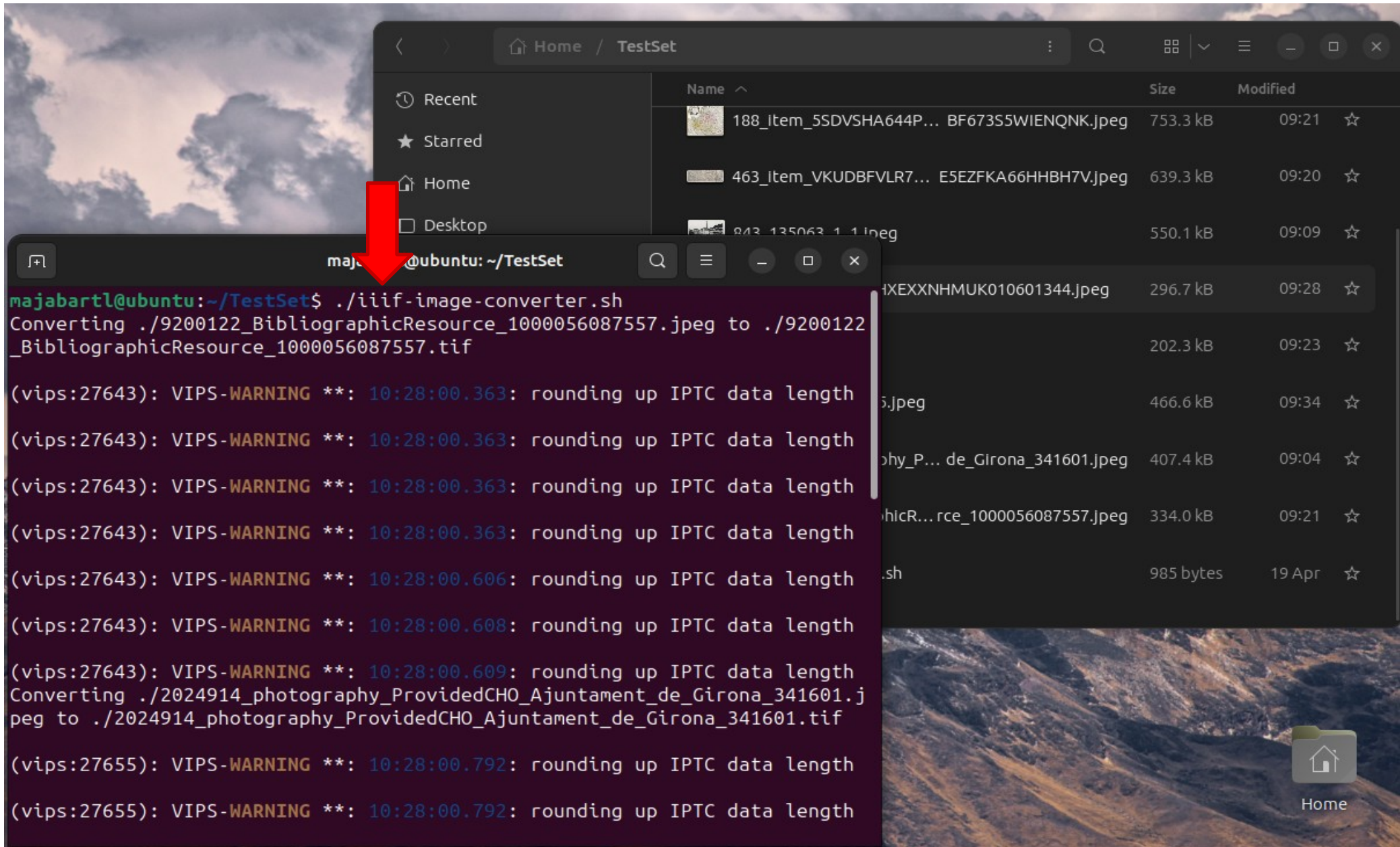
2 Use Case

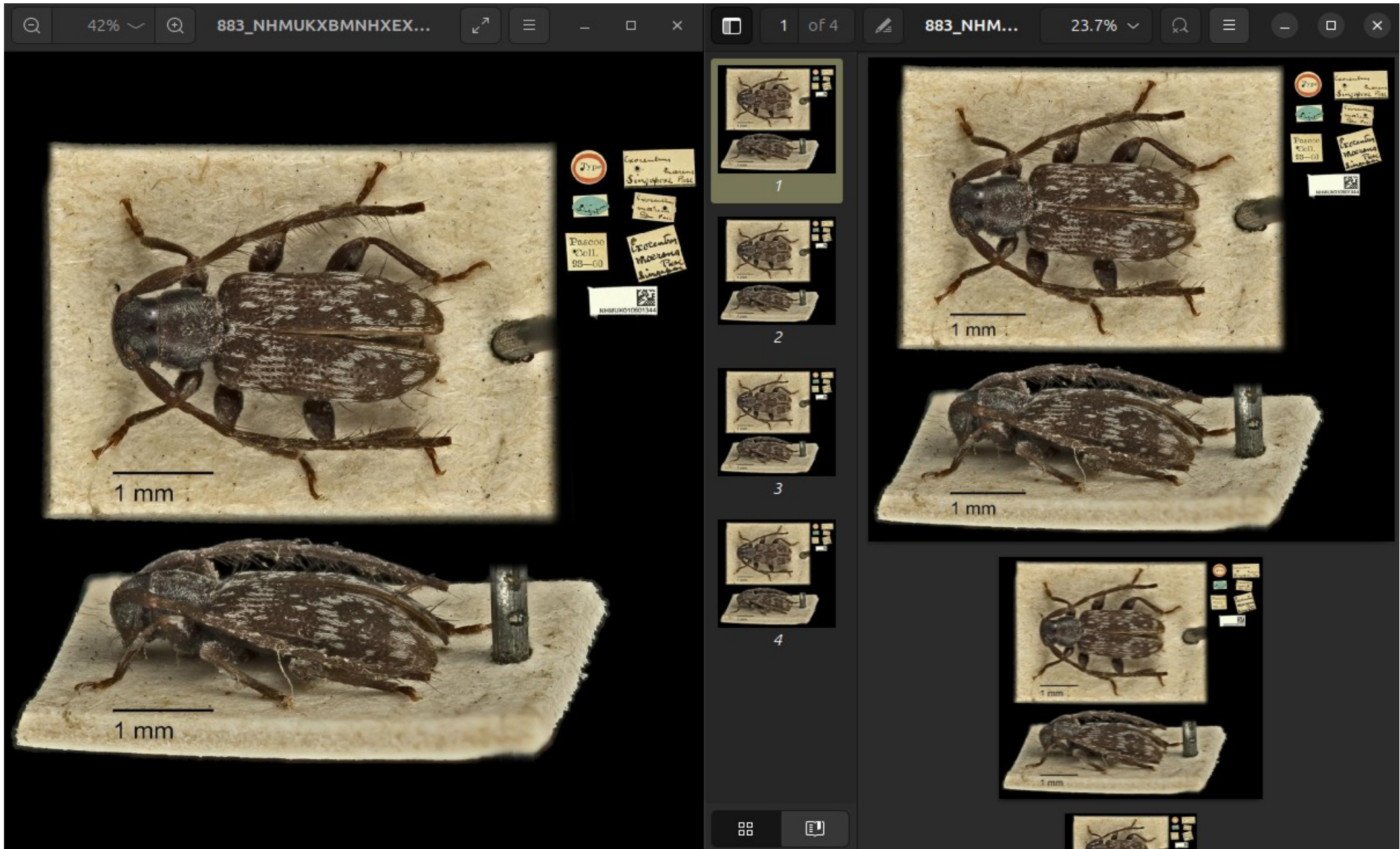
Tiled Multi-Resolution TIFF



- Supported by IIPImage
- Extremely **flexible and powerful** container
- Images are **efficiently stored and compressed**
- **Quick decoding of images** without needing to decode entire image
- Multiple resolutions are stored in **pyramid structure**
- Fast access to images at any size











1 Image Conversion Guide

Test Datasets

	Original	Compression: deflate	Compression: jpeg. Quality: 90
Average image size	436,50 KB	3,99 MB	1,57 MB
Total size	4,3 MB	40 MB	16 MB
<i>Memory consumption: 10 images, medium quality</i>			

	Number of images	Duration
Testset 1	10	few seconds
Testset 2	Ca. 6500	Ca. 4:30 hours

EDM2IIIF Manifest Creation Guide

Introduction and Specifications

>> MORE INFORMATION

ABOUT THE ITEM

CETAF ID

<http://data.rbge.org.uk/herb/E00449232>

Catalogue Number

E00449232

Scientific Name

Carex pallescens L.

Collector

Davis, P. & Coode, M.

Collector Number

36404

Family

Cyperaceae

Genus

Carex

Species

pallescens

Field Notes

Not specified



3 IIF Manifest Creation Guide

Goal

- Create tool to facilitate workflow towards **Presentation API**
- Use EDM metadata to automatically create **IIF manifests for images** and enrich **EDM metadata with IIF descriptions**
- **Download** IIF manifests as well as enriched EDM metadata records



3 IIF Manifest Creation Guide

Why?

High amount of pictures
=
high amount of time for
IIF manifest creation



3 IIF Manifest Creation Guide

What do you need?

- IIF images **should** be stored in the correct location (IIP Image server)
- Metadata records **need** to follow the EDM specifications
- EDM dataset **must** be uploaded using OAI-PMH or a zip file



3 IIF Manifest Creation Guide

Source

Manifest Creation Guide and EDMIIF Manifest Creation Tool:

- [https://
docs.google.com/document/d/1UuQOq_u2TukAPfZ-WggRRC5jDDiR2Mk2bxaL-dXrTLPs/edit](https://docs.google.com/document/d/1UuQOq_u2TukAPfZ-WggRRC5jDDiR2Mk2bxaL-dXrTLPs/edit)
- <http://openup.ait.co.at/edm2manifest/>



4 Use Case

Welcome to EDM2IIIF Manifest Creation!

The EDM2IIIF Manifest Creation Tool allows you to:

1. use EDM metadata from visual cultural heritage objects (edm:type=IMAGE) to automatically create IIIF manifests for images and enrich the EDM metadata with IIIF descriptions
2. download the IIIF manifests that were created based on your EDM metadata
3. download the enriched EDM metadata with IIIF descriptions

[Start](#)



EDM2IIIF Manifest Creation

Upload/Track Data

Name

Ex: test



IIIF service base URL for images

Ex: http://example.com/iiif/



IIIF service base URL for manifests

Ex: http://example.com/manifests/



Harvest protocol:

OAI-PMH upload File upload Track/download data

Submit

Harvest protocol:

OAI-PMH upload File upload Track/download data

URL

`http://example.com/oai/?verb=ListRecords&metadataPrefix=edm&set=xy`

Submit

OAI-PMH Upload

Harvest protocol:


OAI-PMH upload File upload Track/download data

Durchsuchen...

Keine Datei ausgewählt.

Submit

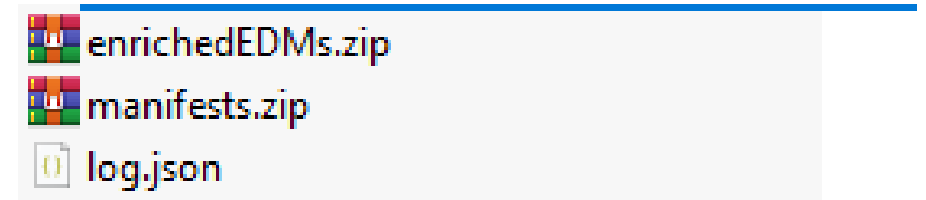
zip Upload

Title	Status	IIIF base URL for images	IIIF base URL for manifests	Process info	Start	End	Results	Option
lasttest	harvesting	http://my.IPADDRESS/iiif/	http://my.IPADDRESS /manifests/	log.json	22-08-2023 09:29:20.712			

Harvesting Status

Title	Status	IIIF base URL for images	IIIF base URL for manifests	Process info	Start	End	Results	Option
test2	done	http://my.IPADDRESS/iiif/	http://my.IPADDRESS /manifests/	log.json	16-08-2023 11:17:55.377	16-08-2023 11:19:17.521		

End Status



Download Output

EDM Original

```
1 <?xml version="1.0" ?>
2 <rdf:RDF xmlns:dc="http://purl.org/dc/elements/1.1/" xmlns:dcterms="http://purl.org/dc/terms/" xmlns:edm:
3 <edm:ProvidedCHO rdf:about="DATAFLOXIBSASXSLOVAKIAXSAV0001017">
4 <dc:identifier>SAV - Dataflos - SAV0001017</dc:identifier>
5 <dc:title xml:lang="la">Malva parviflora L.</dc:title>
6 <dc:contributor>Nábošlek, F. (collector)</dc:contributor>
7 <dc:description>whole organisms</dc:description>
8 <dc:description>Family: Malvaceae</dc:description>
9 <dc:description>dried and pressed</dc:description>
10 <dc:relation>http://www.biodiversitylibrary.org/name/Malva_parviflora_L%24</dc:relation>
11 <dc:source>Dataflos</dc:source>
12 <dc:subject rdf:resource="http://test113.ait.co.at/tematres/LinBi_Simple_Voc/?ID=Flower"/>
13 <dc:subject rdf:resource="http://test113.ait.co.at/tematres/LinBi_Simple_Voc/?ID=Medical%20plant"/>
14 <dc:subject rdf:resource="http://test113.ait.co.at/tematres/LinBi_Simple_Voc/?ID=Plant"/>
15 <dc:subject rdf:resource="http://openup.nhm-wien.ac.at/commonNames/226263"/>
16 <dc:subject rdf:resource="http://openup.nhm-wien.ac.at/commonNames/226264"/>
17 <dc:subject rdf:resource="http://openup.nhm-wien.ac.at/commonNames/226265"/>
18 <dc:subject rdf:resource="http://openup.nhm-wien.ac.at/commonNames/226266"/>
```

EDM2IIIF Enrichment (service block)

```
315 <svcs:Service rdf:about="http://192.168.0.144/iiif/SAV0001017.tif">
316 <dcterms:conformsTo rdf:resource="https://iiif.io/api/image/3.0/">
317 <doap:implements rdf:resource="http://iiif.io/api/image/3/level2.json"/>
318 </svcs:Service>
```

Manifest Output

```
1 {
2   "@context": [
3     "http://www.w3.org/ns/anno.jsonld",
4     "http://iiif.io/api/presentation/3/context.json"
5   ],
6   "id": "http://192.168.0.144/manifests/manifest_SAV0001017.json",
7   "type": "Manifest",
8   "label": {
9     "la": [
10      "Malva parviflora L."
11    ]
12  },
13  "summary": {
14    "@none": [
15      "whole organisms",
16      "Family: Malvaceae",
17      "dried and pressed"
18    ]
19  },
20  "metadata": [
21    {
22      "label": {
23        "en": [
24          "identifier"
25        ]
26      },
27      "value": {
28        "@none": [
29          "SAV - Dataflos - SAV0001017"
30        ]
31      }
32    },
33    {
34      "label": {
35        "en": [
36          "contributor"
37        ]
38      },
39      "value": {
40        "@none": [
41          "N\u00e1bo\u015b\u011blek, F. (collector)"
42        ]
43      }
44    }
45  ],
46}
```



4 Use Case

Test Datasets

	Number of records	Duration (min)
Testset 1	10	2
Testset 2	Ca. 6500	Ca. 2:30 hours



Credits

OpenUp!

Karol Marhold (Slovak Academy of Sciences)

Maja Bartl, Odo Benda, Gerda Koch, Maja Marinkovic, Ramiro Ortiz
(AIT)

Europeana & IIF

Europeana IIF Working Group members

Kontakt

Ramiro Ortiz ortizr@ait.co.at, Gerda Koch kochg@ait.co.at

AIT Angewandte Informationstechnik Forschungsgesellschaft mbH

Klosterwiesgasse 32/1

8010 Graz

<http://www.ait.co.at>

