

Tool comparison

Project page:

https://projectweek.na-mic.org/PW40_2024_GranCanaria/Projects/CurrentStateOfDicomwebForPathology/

	wsidicom	dicomslide
Representation of slide - level - label - thumbnail etc.	yes	yes
Image reading (from file system and via DICOMweb)	yes	yes
Image writing (to file system and to DICOM server)	yes, on filesystem, possible to DICOM server, however writing to it is not directly supported. Only support for fully-tiled	Yes, possible via dicomfile_client / dicomweb_client
Metadata extraction (from file system and via DICOMweb)	yes	yes
Metadata writing	see image writing	see image writing
Annotation reading (from file system and via DICOMweb)	Yes, but as to my understanding only StructuredReport-like annotations	Yes, reading DICOM annotations
Annotation generation / writing	Yes, but as to my understanding only StructuredReport-like annotations	no, this functionality is in highdicom
Performance	Reading and writing via streams, though less efficient than dicomslide - but would need to quantify that.	dynamically retrieves only the requested image frames via streams
Reading of other file formats	can be added by the user, there is some guidance in the documentation	no
Iterating over tiles of single slide	No iteration functionality, only opening	No iteration functionality, just opening
Iterating over a set of tiles of multiple slides	See above	See above

Limitations wsidicom (from their documentation)

- Levels are required to have (close to) 2 factor scale and same tile size.
- Only 8 bits per sample is supported for color images, and 8 and 16 bits for grayscale images.
- Without optional dependencies, the following transfer syntaxes are supported:
 - JPEGBaseline8Bit
 - JPEG2000
 - JPEG2000Lossless
 - ImplicitVRLittleEndian
 - ExplicitVRLittleEndian
 - ExplicitVRBigEndian
- With imagecodecs, the following transfer syntaxes are additionally supported:
 - JPEGExtended12Bit
 - JPEGLosslessP14
 - JPEGLosslessSV1
 - JPEGLSLossless
 - JPEGLSNearLossless
- With pylibjpeg-rle RLELossless is additionally supported.
- Optical path identifiers needs to be unique across instances.
- Only one pyramid (i.e. offset from slide corner) per frame of reference is supported.

Limitations dicomslide

- Not actively developed right now and integrated into fewer other libraries

Tools that can complement wsidicom / dicomslide and provide more close-to-analysis functionality

- see [here](#)