

Video tutorial for cropping, exporting, and requesting microCT images

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(2020.03 updated)

Youtube link: <https://www.youtube.com/watch?v=umRF6ODcQqQ>

This is the video tutorial for cropping, exporting, and requesting microCT images.

In this video, you will learn:

1. How to remotely check your sample images on a web browser (i.e., Chrome, Safari).
2. How to crop the scanned images.
3. How to export files generated from cropping:
 - 3.1. AIM files
 - 3.2. TIFF files
 - 3.3. DICOM files
4. How to request files.

1. How to remotely check your images on a web browser (i.e., Chrome, Safari).

Due to security reasons, the IP address and login password will NOT be shown here.
Please visit our website <https://www.med.upenn.edu/orl/uct/data-access.html>

Here is an example of how to check your sample on microCT 35:

Sample#: 5640, Measurement#: 14705

Open the web link for microCT 35

(You can access the link at <https://www.med.upenn.edu/orl/uct/data-access.html>)

Please be patient! It may take up to 30 seconds to load the page.

Enter the Measurement# to quickly locate your sample on the webpage.

Click the "Slice Viewer"

5640:	XSL_WJT_Rat2_L4_Tibia
14702:	14-NOV-2018 19:19 1376 Slices +
	Slice Viewer 2D Results 3D Results 3D Eval. Logfile Meas.Logfile Files
14705	15-NOV-2018 17:05 698 Slices +
	Slice Viewer 2D Results 3D Results 3D Eval. Logfile Meas.Logfile Files

Now, you have the option to view "Multiple Slices" or "Single Slice".

Multiple Slices	Slices:	From: 0	To: 697	Show
	Shown Slices:	8		
	Downscale Factor:	8		
Single Slice	Slice:	0		Show
	Downscale Factor:	2		
Norm 0=>max data_value	0			

Adjust the image size accordingly by modifying the "Downscale Factor".
(A higher downscale factor results in a smaller image size)

Multiple Slices	Slices:	From: 0	To: 697	Show
	Shown Slices:	8		
	Downscale Factor:	8		
Single Slice	Slice:	0		Show
	Downscale Factor:	2		
Norm 0=>max data_value	0			

Click the "Show Files":

Slice Viewer

[Back to Measurements](#) | [Show Files](#)

File: DK0:[MICROCT.DATA.][00005640.00014705]D0012437.ISQ;1

You will see all the files associated with this Measurement #

[Back to Measurements](#) | [Slice Viewer](#)

Sample: 5640: XSL_WJT_Rat2_L4_Tibia
Measurement: 14705: 15-NOV-2018 12:25 698 Slices +

Filename	Last Edited	Size (kB)	Information
RSQ			
ISQ			
 D0012437.ISQ	15-NOV-2018 11:53:01.40	5651208	CTHEADER
MSQ			
AIM			
 D0012437.AIM	23-MAR-2020 18:17:22.66	4988631	AIX
 D0012437_SEG.AIM	23-MAR-2020 18:30:04.97	23654	AIX
Text			
Other Files			
 D0012437.GOBJ	23-MAR-2020 18:12:32.71	63	
 D0012437.RAD	15-NOV-2018 11:13:20.52	55552	
 D0012437.SCV	15-NOV-2018 11:13:20.42	128	
 D0012437_EVAL_VOI1.COM	23-MAR-2020 18:12:32.84	6	
 D0012437_SEG.TIF	23-MAR-2020 18:50:27.85	67	

Please note: The files on the webpage only show the **latest** version. If you would like to retrieve any files, you can fill out a file request form. Please refer to [section 4 of this video: How to request files.](#)

(The File Request Form <https://www.med.upenn.edu/orl/uct/data-access.html>)

2. How to crop the scanned images:

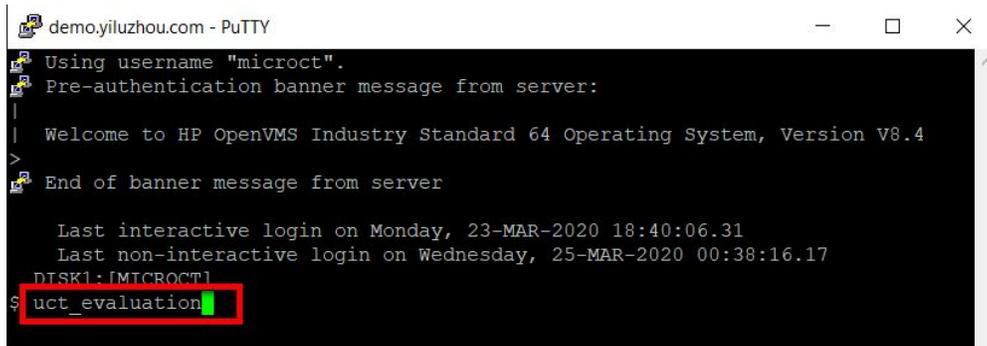
First, please make sure you turn off **CapsLock** and **Numlock** on the keyboard!

Here is an example of how to crop an image on microCT35:

Double click "uCT 35" icon:



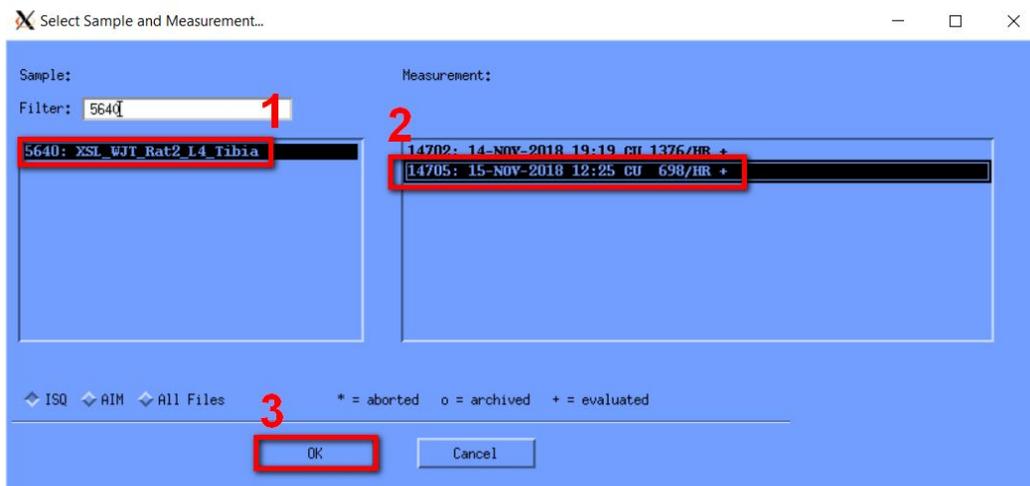
Type `uct_evaluation` (Right click to paste), Press Enter

A screenshot of a PuTTY terminal window titled "demo.yiluzhou.com - PuTTY". The terminal shows a login prompt for the user "microct". The banner message reads: "Welcome to HP OpenVMS Industry Standard 64 Operating System, Version V8.4". The prompt is "\$". The user has entered "uct_evaluation", which is highlighted with a red box. The terminal also shows the last interactive login on Monday, 23-MAR-2020 18:40:06.31 and the last non-interactive login on Wednesday, 25-MAR-2020 00:38:16.17. The prompt is "\$".

You will see "Select Sample and Measurement..." window: **Sample**(left), **Measurement**(right).

Sample#: 5640, and Measurement#: 14705

Click "OK"



Click on the image corresponding to slice 1

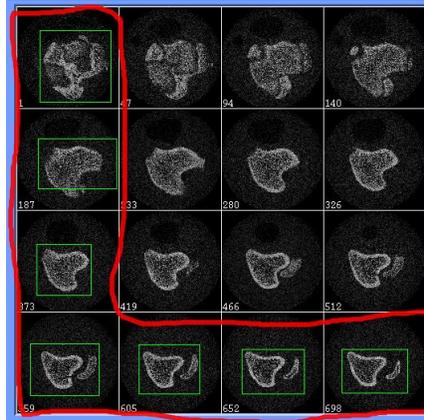
Tutorial for cropping, exporting, and requesting microCT images

Click the rectangular contour button (Contours will be save as GOBJ file)



Draw a rectangular contour on slice 1, encompassing the whole sample while leaving ample space around the edges.

Repeat this process and crop in an "L" shaped fashion (see below picture):

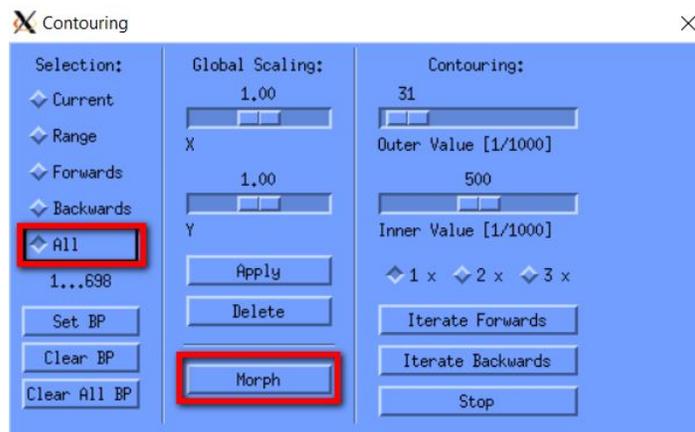


Click 'C...'  to open the Contouring window

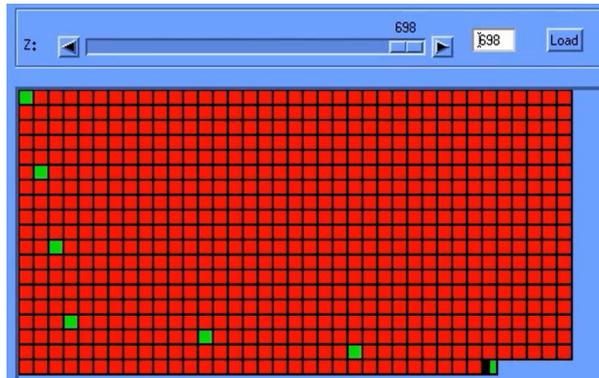
The **green slices** indicate the slices where you have drawn the rectangular contours



In the 'Selection': click 'All', then click 'Morph'.

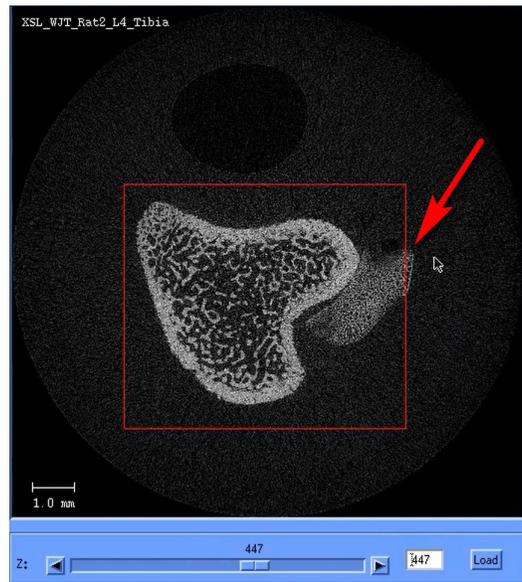


You will then see **red slices** appear, which indicate morphed contours.

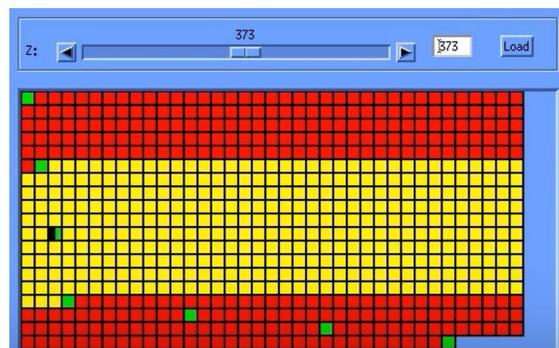


(By clicking 'Morph', the system draws interpolated geometry on the slices between your manually drawn contours.)

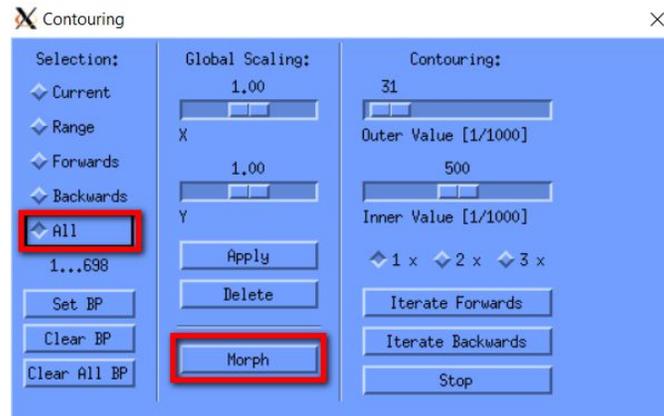
Click through the morphed slices and check to ensure that the contours encompass your sample entirely. See? This part of your sample falls outside the contour.



To make adjustments, select the closest manually drawn contour, delete the contour, and redraw a larger contour. You will see **yellow slices** appear, which indicates re-morphing is needed.



Click "All", and click "Morph" again to do re-morph.

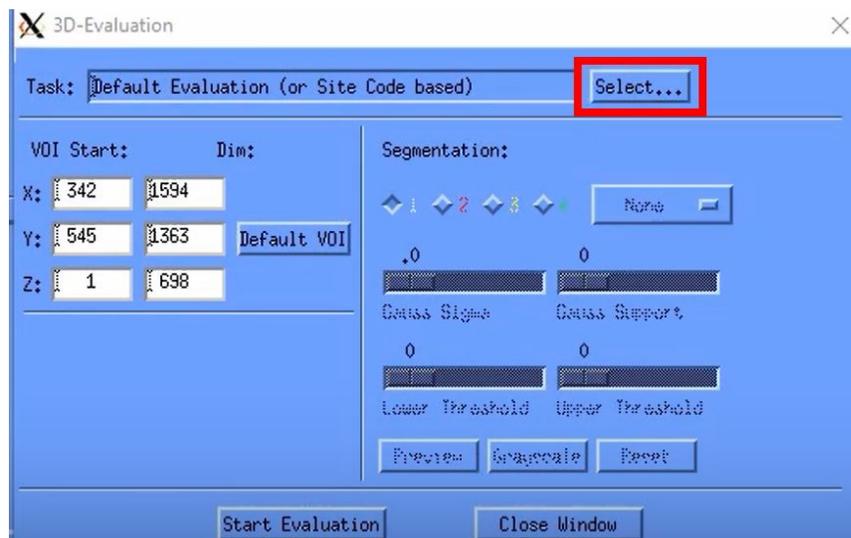


Now, every part of your sample is within the contour.

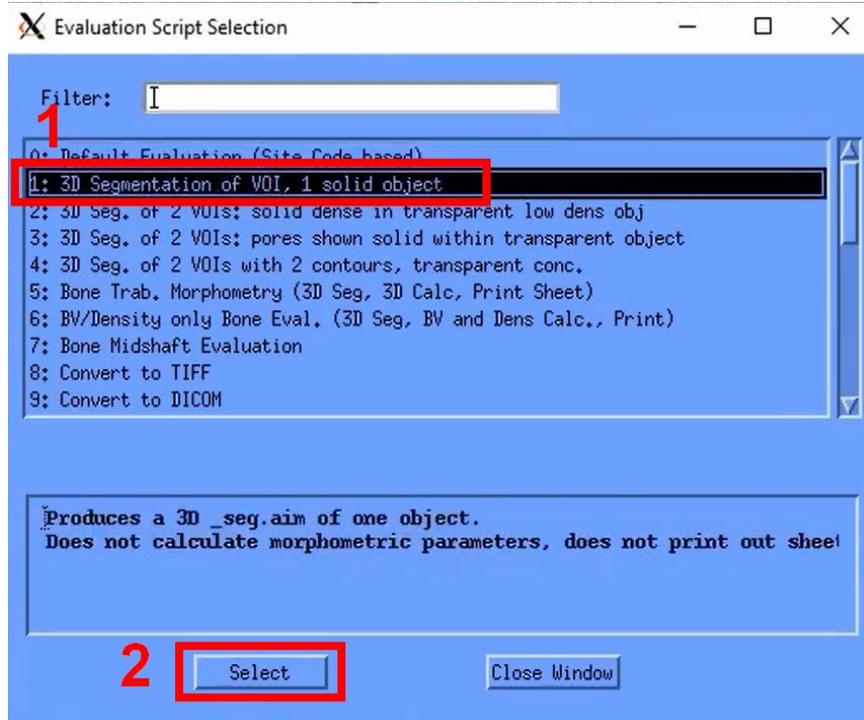
3. How to export files generated from cropping.

3.1. AIM files

Click 'T...' 
Click "Select..."

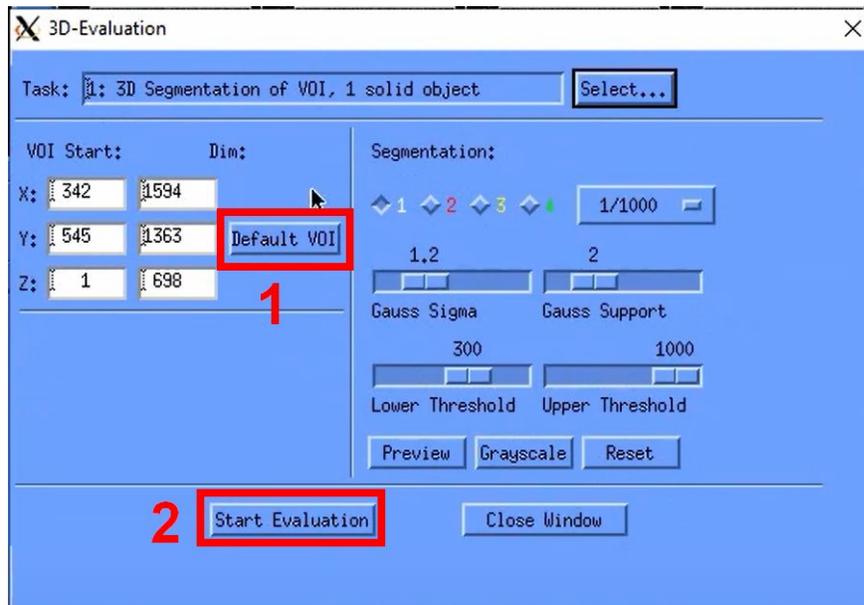


Select Task: '3D Segmentation of VOI, 1 solid object',
Click "Select"



Click "Default VOI" (**VERY IMPORTANT!**)

Click "Start Evaluation"



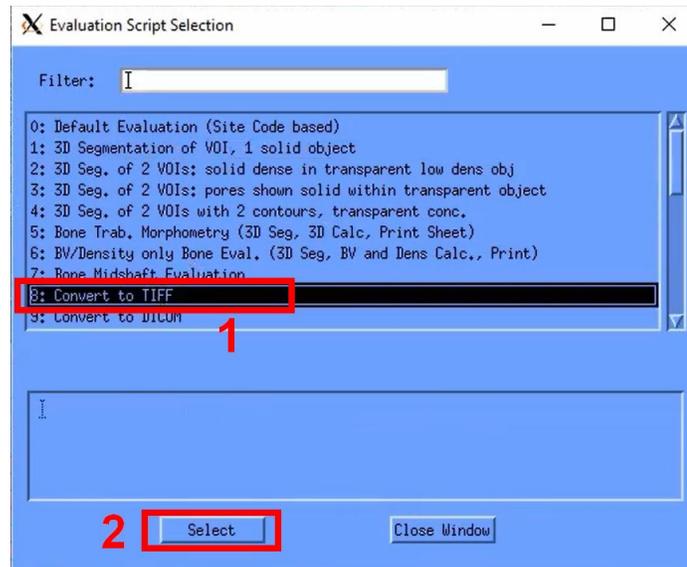
(This process will run in the background and can take up to 1 hour depending on your image size.) You may proceed to crop other samples.

3.2. TIFF files

Click 'T...'

Click "Select..."

Select Task: 'Convert to TIFF'. Click "Select"



Click "Default VOI" (**VERY IMPORTANT!**)

Click "Start Evaluation"

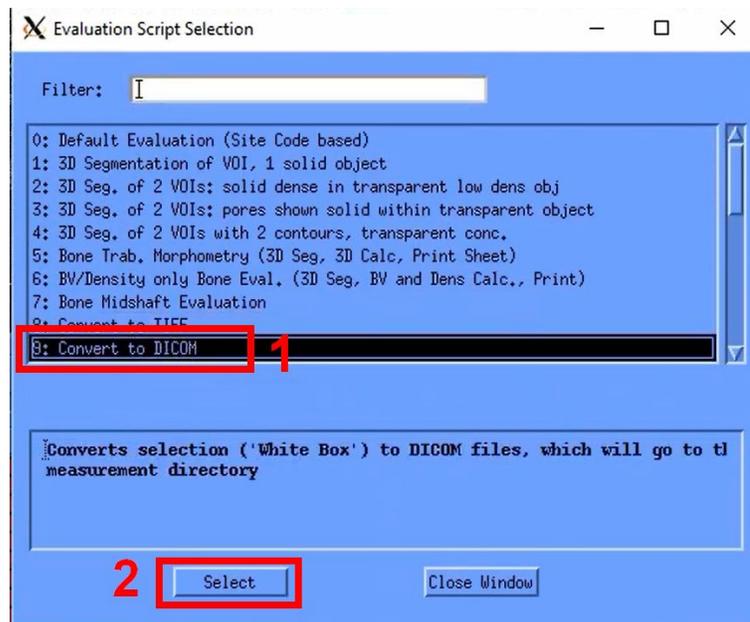
(This process will run in the background and can take up to 1 hour depending on your image size.) You may proceed to crop other samples.

3.3. DICOM files

Click 'T...'

Click "Select..."

Select Task: 'Convert to DICOM'. Click "Select"



Click "Default VOI" (**VERY IMPORTANT!**)

Click "Start Evaluation"

(This process will run in the background and can take up to 1 hour depending on your image size.) You may proceed to crop other samples.

4. How to request files.

Please complete the "User_file_request" Excel spreadsheet. You may find the "User_file_request" Excel spreadsheet:

- If you are on our analysis computer in Room 315, you can open the folder "For_MicroCT_Users" on the desktop. There is an Excel file:"User_file_request".
- You may download it at <https://www.med.upenn.edu/orl/uct/data-access.html>

Open the "User_file_request" Excel spreadsheet,

1) Enter your Gmail. (Files will be later shared to the Google Drive associated with this account.)

2) Make sure you enter the Sample# and Measure# under the correct scanner!

For example, you would like to download files from the microCT 35:

Sample#: 5640, Measurement#: 14705

Enter 5640 at the Sample# column, Enter 14705 at the Measure# column.

1						
2	Your Gmail:					
3		MicroCT35		Vivact40		
4	Sample#	Measure#	File_Types	Sample#	Measure#	File_Types
5	5640	14705	AIM			
6						

→ If you want to request AIM file, enter AIM at the File_Types column.

Sample#	Measure#	File_Types
5640	14705	AIM

→ If you want to request TIF file, enter TIF at the File_Types column.

Sample#	Measure#	File_Types
5640	14705	TIF

→ If you want to request DICOM file, enter DICOM at the File_Types column.

Sample#	Measure#	File_Types
5640	14705	DICOM

→ If you want to request multiple file types, e.g.: you need both DICOM and AIM files, separate the file types with a **comma**: **DICOM, AIM**

Sample#	Measure#	File_Types
5640	14705	DICOM,AIM

3) Save this Excel spreadsheet, and send it to pcmd.microct@gmail.com

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- 4) Our system will automatically process your request. You will receive a notification email from Google Drive with a shared folder containing the files you have requested.