This tutorial contains navigation buttons that enable you to move throughout the tutorial.

Please use the navigation buttons and not the page up/page down or arrow keys to navigate through the tutorials.

This is the 'Next' button. It takes you to the next frame or stop point.

This is the 'Previous' button. It takes you to the previous frame or stop point.

This is the 'Go to frame' button. It takes you to a specified frame.

This is the 'Go to URL' button. It takes you to a website link.

Press the 'Next' button below to start this tutorial.
This tutorial covers how to cut up a stage raster image into the individual tile images. The tiles are defined by the scan size used when creating the stage raster image. However, it is possible to cut the images up into smaller or larger tiles as long as the number of tiles does not exceed 100 and the pixel dimensions used are multiples of 8 (8, 16, 32, 64, 128, 256, 512, etc.).
From the 'Data Pre Processing' menu select -> 'Cut Up Stage Raster'
Choose the image name and variable names from the drop down menus and then press the 'Load Selected Image' button.
Choose the correct name for the total counts matrix that corresponds with your image from the 'Name of total counts matrix' drop down menu.
Choose the correct name for the sum of selected peaks matrix that corresponds with your image from the 'Name of sum of selected matrix' drop down menu.
Type in the resolution of the tiles used for the stitched image.

This is the pixel dimension chosen when setting up the stitched image. However, you can enter a different number if you want to cut the image up into different sized tiles.

NOTE: Using a pixel dimension that results in tiles larger than the actual size used for the data acquisition can make it so you have lines in the resulting images at the intersections of the original tiles. This will cause artifacts if you run PCA on the new images tiles.

NOTE: You can use this panel with any image whether or not the data is an actual stitched image.

NOTE: The tile resolution must be a multiple of 8 and cannot result in more than 100 tiles (10 rows or 10 columns)
Data Selection Panel

Name of Image Matrix: imagedata_stichscansmall
Name of Variable Matrix: exactmass_stichscansmall

Name of total counts matrix: totalcounts_stichscansmall
Name of sum of selected matrix: sumofselected_stichscansmall

Tile resolution: 256

#rows = 8
#cols = 10

Cut Up Stage Raster
Launch Tile Data Extractor

After the tile resolution is entered the number of rows and columns of tiles is shown here.

Close
Press the 'Cut Up Stage Raster' button to begin the cutting process. This can take a while, so be patient.
After the original image matrix is cut up, three new variables are created in the Matlab workspace.

- `indimages` = the individual tile images
- `indsumselected` = the individual sum of selected peaks images
- `indtotalcounts` = the individual total counts images
A spreadsheet is also created in the active Matlab directory called 'tiledatable.xls'.

This spreadsheet contains the integrated peaks areas for all peaks for each individual tile image

This spreadsheet can be saved as a tab delimited text file (.txt) and then imported into the spectragui.
**Data Selection Panel**

<table>
<thead>
<tr>
<th>Name of Image Matrix</th>
<th>Name of Variable Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td>imagedata_stichscansmall</td>
<td>exactmass_stichscansmall</td>
</tr>
</tbody>
</table>

**Load Selected Image**

Image Matrix: `imagedata_stichscansmall`
Variable Matrix: `exactmass_stichscansmall`

**Name of total counts matrix**
`totalcounts_stichscansmall`

**Name of sum of selected matrix**
`sumofselected_stichscansmall`

**Tile resolution**
256

**#rows**
8
**#cols**
10

**Cut Up Stage Raster**

Press the 'Launch Tile Data Extractor' button to open a window that will allow you to select individual tile images.
This is the Tile Image Extractor. Each individual tile is a button. The image on the button represents the total counts image for that tile.

NOTE: The image on each tile may be scaled slightly smaller or larger than its actual size depending on the number of tiles and pixel dimensions of each tile. However, the data is stored correctly.
To extract the data for a given tile, simply press the button for the tile data you want. Here we press the tile 76 button.
The image data, total counts and sum of selected data for that tile are extracted and put into new variables within the Matlab workspace.
Once you have extracted the images you want you can close this window by pressing the 'close' button.
We can plot the data and see that the correct image data was extracted from the stage raster.
It is also possible to use a different tile resolution and cut the image into different sized tiles.

As stated before, if you make the tiles larger you may see the lines from the original tiles in the image. This will likely cause artifacts if you run MVA on the larger tiles.

Let's try using 512 as the tile resolution.
Data Selection Panel

Name of Image Matrix: imagedata_stichscansomall
Name of Variable Matrix: exactmass_stichscansomall

Load Selected Image
Image Matrix: imagedata_stichscansomall
Variable Matrix: exactmass_stichscansomall

Name of total counts matrix:
totalcounts_stichscansomall
Name of sum of selected matrix:
sumofselected_stichscansomall

Tile resolution:
512

(rows = 4, cols = 5)

Now there are 4 rows and 5 columns instead of 8 and 10 as expected.

Cut Up Stage Raster
Launch Tile Data Extractor
Close
### Data Selection Panel

<table>
<thead>
<tr>
<th>Name of Image Matrix</th>
<th>Name of Variable Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td>imagedata_stich...</td>
<td>exactmass_stichsc...</td>
</tr>
</tbody>
</table>

**Image Matrix**: `imagedata_stichscansmall`  
**Variable Matrix**: `exactmass_stichscansmall`  

- **Name of total counts matrix**: `totalcounts_stichscansmall`  
- **Name of sum of selected matrix**: `sumofselected_stichscansmall`  

**Tile resolution**: 512

**#rows**: 4  
**#cols**: 5

- **Cut Up Stage Raster**  
- **Launch Tile Data Extractor**

Press the 'Cut Up Stage Raster' button as before.
Now let's press the 'Launch Tile Data Extractor' to see what the new tiles look like.
We now have fewer buttons since the images are now 512 x 512 pixels.

NOTE: The button size does not scale with the pixel dimensions so even though the resulting tile images are larger than before they are fit onto the same sized buttons.
Let's look at tile 18 which includes the tile we looked at previously.
Here we see the new tile data. The tile lines are just barely visible for these images.
That's it for this tutorial.

Press the green button on the left to go back to the previous step. Press the button the right to go back to the beginning of the tutorial.