

Handling Large Images In QuikMap By Resizing

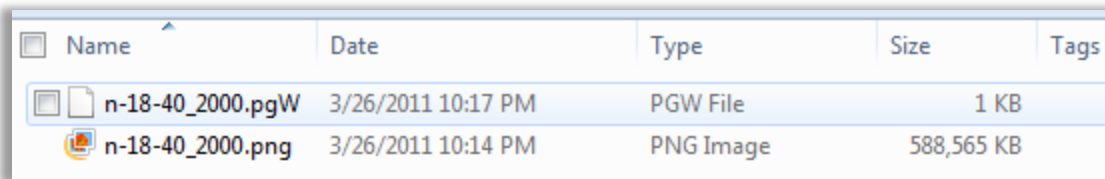
QuikMap is often used for many types of image handling. It's possible to stitch images together as well as obtain sub-images of a single larger one. In some cases, it might be required to reduce the resolution of the image and therefore the amount of memory that is required to load it.

QuikMap is a 32 bit application. In Windows, it is well known that virtually all 32 bit applications are limited to using 2 GB of memory. However, QuikMap is compiled in a special way so that it can use up to 4 GB of memory. Unfortunately, even 4 GB is may not be enough to load all of your images.

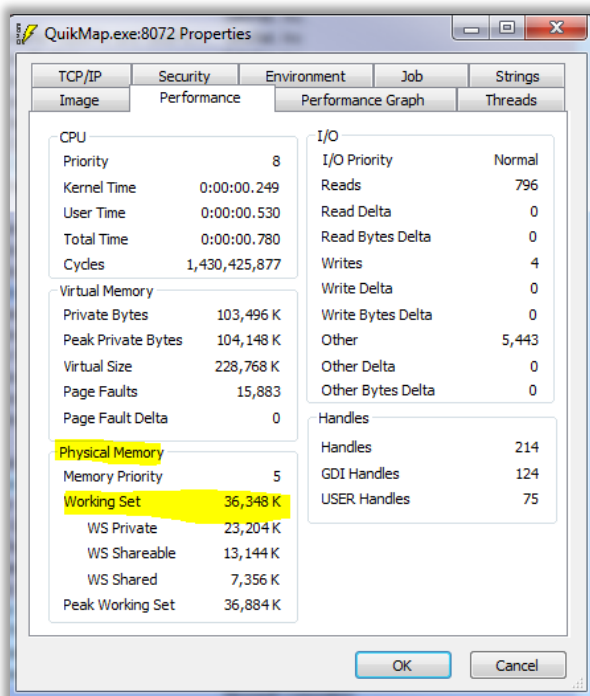
To see how much memory QuikMap or any application is using, Windows has a tool called Process Explorer which can be downloaded from the Microsoft web site:

<http://technet.microsoft.com/en-us/sysinternals/bb896653>

As an example of how we can reduce the resolution of an image and thereby the memory footprint, let's assume we have a PNG image of approximately 600MB:

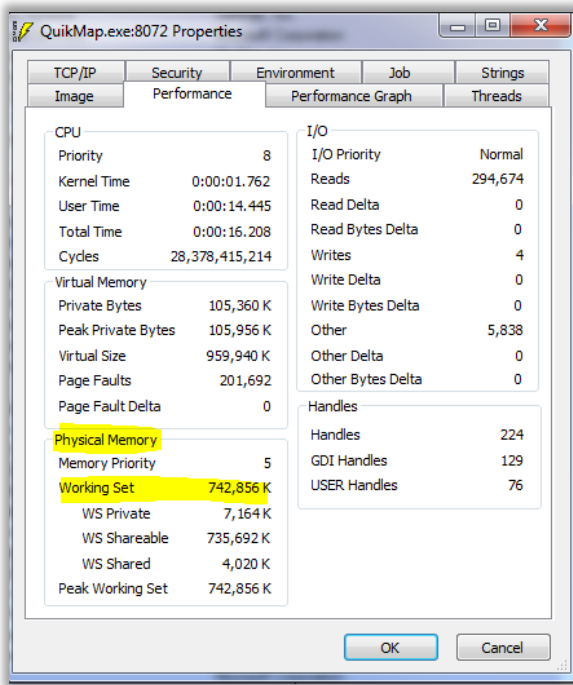


Name	Date	Type	Size	Tags
n-18-40_2000.pgW	3/26/2011 10:17 PM	PGW File	1 KB	
n-18-40_2000.png	3/26/2011 10:14 PM	PNG Image	588,565 KB	



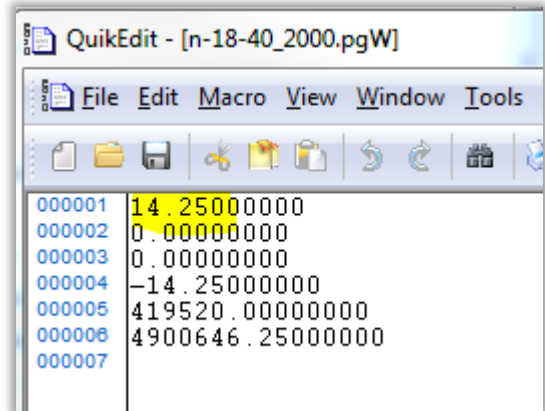
CPU		I/O	
Priority	8	I/O Priority	Normal
Kernel Time	0:00:00.249	Reads	796
User Time	0:00:00.530	Read Delta	0
Total Time	0:00:00.780	Read Bytes Delta	0
Cycles	1,430,425,877	Writes	4
Virtual Memory		Write Delta	0
Private Bytes	103,496 K	Write Bytes Delta	0
Peak Private Bytes	104,148 K	Other	5,443
Virtual Size	228,768 K	Other Delta	0
Page Faults	15,883	Other Bytes Delta	0
Page Fault Delta	0	Handles	
Physical Memory		Handles	214
Memory Priority	5	GDI Handles	124
Working Set	36,348 K	USER Handles	75
WS Private	23,204 K		
WS Shareable	13,144 K		
WS Shared	7,356 K		
Peak Working Set	36,884 K		

In Process Explorer we can right click on QuikMap and see how much memory is being used by the application. Here, we see that the application, when first run, requires about 36MB.

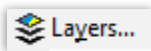


You can see that after loading the example image, QuikMap is using 742 MB of its 4096 MB (4 GB) limit.

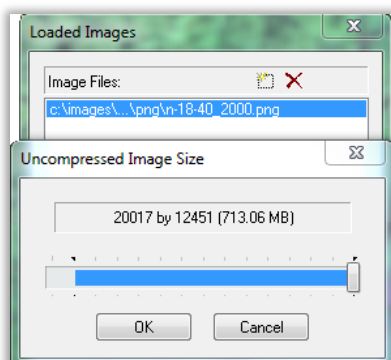
Something the user can do to reduce the size of your images by a factor of 4, is to reduce the resolution by a factor of 2. To determine the current resolution of an image, open the TFW registration file and look at the first line. This will indicate how many meters each pixel represents. In our example image, each pixel is 14.25 m wide:



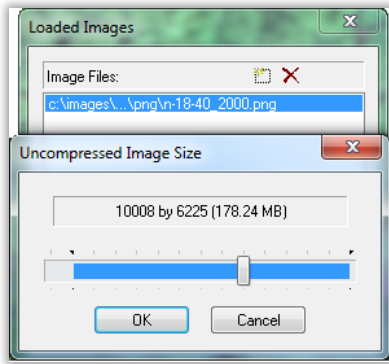
To reduce the file size, first load the image in QuikMap by choosing load from the Image menu.



Next, choose Layers from the Image menu.



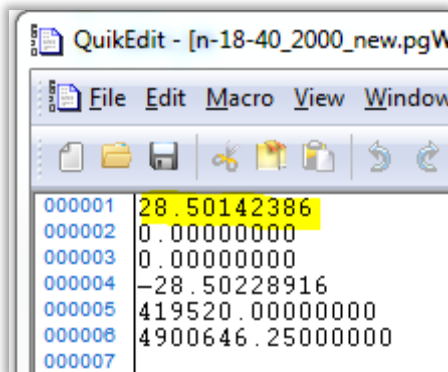
Then select then right-click on the image name and choose Resize the Image...



Then move the slider to the left to reduce the number of pixels in each axis by a factor of 2:

Finally, in the Layers dialog, right-click and choose Save to New File. You will find that the new image is only 25% the size of the original:

Name	Date modified	Type	Size
n-18-40_2000_new.pgW	3/26/2011 11:16 PM	PGW File	1 KB
n-18-40_2000_new.png	3/26/2011 11:16 PM	PNG Image	161,414 KB
n-18-40_2000.pgW	3/26/2011 10:17 PM	PGW File	1 KB
n-18-40_2000.png	3/26/2011 10:17 PM	PNG Image	588,565 KB



If you look at the new world file, you'll see that the resolution has changed by a factor of 2:

After loading the new smaller image, Process Explorer shows that I'm using about 30% of the memory that the original needed (Note that you won't get the full factor of 4 improvement because QuikMap needs some memory just to run).

