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Subject: 3DS Max and unit conversion

Posted by [Magic](#) on Wed, 01 Apr 2009 06:42:24 GMT

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Hi all,

I was very excited by the new material made available, so I decided to print icecubes.

I wanted to take advantage of this opportunity to test unit conversion since I had some problems with my previous model.

So I designed a 1cm<sup>3</sup> cube in 3DS Max. As my default unit is mm, I made it 10mmx10mmx10mm. I exported it as STL file. While uploading it to Shapeways, I specified mm as the unit. And I got an error message :

Quote:

Your object is too small!

[The size is 0.0 x 0.0 x 0.0 cm / 0.0 x 0.0 x 0.0 inch (h x w x d).

I went back to 3DS Max, changed the default unit to meter, without modifying my model. The cube was now 0.01mx0.01mx0.01m (and still 1cm<sup>3</sup>). I exported it as STL file again. While uploading I specified meter as a unit.

New error message :

Quote:

Your object is too big!

The size is 39.4 x 39.4 x 39.4 cm / 15.5 x 15.5 x 15.5 inch (h x w x d).

Note that 39.4 inches are 1 meter.

Finally I did a last conversion in 3DS MAX to change the default unit to inch. My 1cm<sup>3</sup> was now 0.394"x0.394"x0.394". I save it as STL file. Of course while uploading I specified inch as a unit. This time all was correct.

I did not make any test of "cross-unit" (saying in 3DS Mas that I work in mm and then pretending at the upload that the unit is inch). But, with this experiment, has anyone an idea on how 3DS Max and/or the upload function of Shapeways are dealing with the unit conversion ?

Thanks,

Magic.

PS: I finally give up with the idea of printing icecubes as they seem not to be safe to add in your beverage.

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Subject: Re: 3DS Max and unit conversion

Posted by [virtox](#) on Wed, 01 Apr 2009 12:02:22 GMT  
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In case the question about units is real

Max uses internal units, these are the actual values exported using STL, as far as I can tell.

In Customize->Units Setup->System Setup you define what this max unit will be in real measurements.

(I have this on 1 unit = 1,0 mm, seems you have it on 1 unit = 1 inch or something)

This setting has no influence on the way Max displays measurements, only on the internal unit size.

From your question I gather you only changed the display value ?

Hope this helps !

Did you try the 3ds Max pricing tool ?

That currently forces the above issues by setting all units to 1 mm (display and system) and should probably solve your issue

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Subject: Re: 3DS Max and unit conversion  
Posted by [Magic](#) on Wed, 01 Apr 2009 17:55:47 GMT  
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Hi Virtox,

the question (and all the rest ) was real.

And your explanation is crystal clear.

In effect, I went to the Unit Setup panel to change units, but I missed the System Unit Setup button which was in this panel. I guess it should work now. By the way, changing the System Unit Setup actually scale your object...

And I did not try the 3ds Max pricing tool yet. Thanks for the tip.

Thank you very much again for your help.

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Subject: Re: 3DS Max and unit conversion

Posted by [virtox](#) on Thu, 02 Apr 2009 22:07:26 GMT

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I think you can work around the rescale problem by first setting your system units to mm and then load your max file.

It will complain it has a different unit size, with the option to rescale or not. I don't know which of the two, but one option should work

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Subject: Re: 3DS Max and unit conversion

Posted by [Magic](#) on Mon, 06 Apr 2009 11:56:45 GMT

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Yes, in effect, there are two options when you switch the system unit to mm and reload a model done with inches:

- The first propose you to switch back to inch (that what I've done, so the Zen Box is still internally in inches).

- The second - if I have well understood - does nothing, so 1 inch become 1 mm.

It is not complex to rescale manually, but I decided not to do it. For my next models, I will set the system unit from the beginning in mm.

Thanks again Virtox.

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Subject: Re: 3DS Max and unit conversion

Posted by [Whystler](#) on Mon, 06 Apr 2009 15:40:51 GMT

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Umm, aren't we supposed to reveal April Fools jokes after 12 noon of April1st?

-Whystler

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