ReadMe

APEX™ Destruction Module

June 2009 (1.0 Pre-Beta 3)

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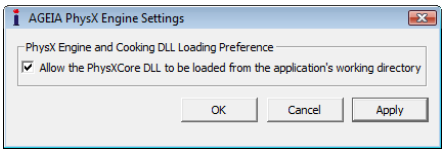
APEX Destruction Module - ReadMe

Getting Started



The APEX Destruction zip file contains a pre-beta release of APEX Destruction. In order to use this pre-beta version, the PhysXSettings need to be changed manually, by running:

"1.0/APEX/bin/ext/win32-physx_2.8.1/PhysXSettingsExt.exe"

Select the checkbox to allow the PhysXCore DLL to be loaded from the application's working directory and click "ok".

The binary directory "1.0/APEX/bin/ext/win32-physx_2.8.1/" contains two more executables, the DestructionTool.exe and the SimpleDestruction_release.exe.

Destruction Tool

The Destruction Tool is used to author destructible assets. See the APEX Module User Manual, which is located at "1.0/APEX/docs/APEX_Destruction_Module_UG".

SimpleDestruction App

The SimpleDestruction App allows a user to view and destruct assets which were generated with the Destruction tool. The SimpleDestruction App provides the following command line options:

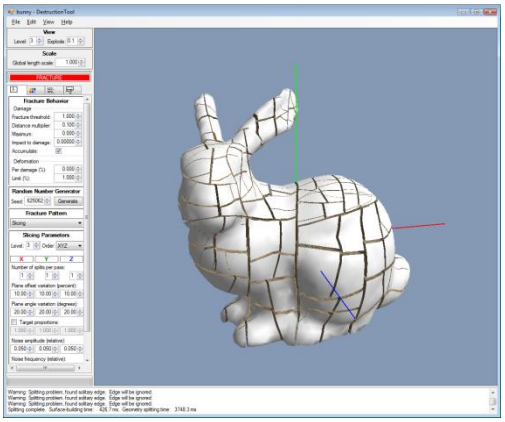
Command Option	Description
-f pdafile	Load the specified pda file and place it at the origin
-p pdafile	Generates a pile of the specified destructible actor
-c pdafile	Generate a circle of the specified destructible actor
-e pdafile	Load asset in editor mode
-s scale	Set destruction scale (1=low, 3=high)
-d [0:1]	Set dynamic (vs static) mode for actors

After loading the destructible asset, the following key/mouse commands are available:

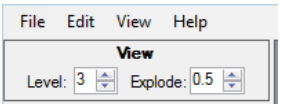
Command Option	Description
w	Move forward
s	Move backward
a	Move left
d	Move right
Space	Eject a box, this can be used to cause damage on the destructibel asset
Left mouse	Change camera view
Right mouse	Destruct area behind the mouse icon
ESC	End application
v	Visualize collision mesh

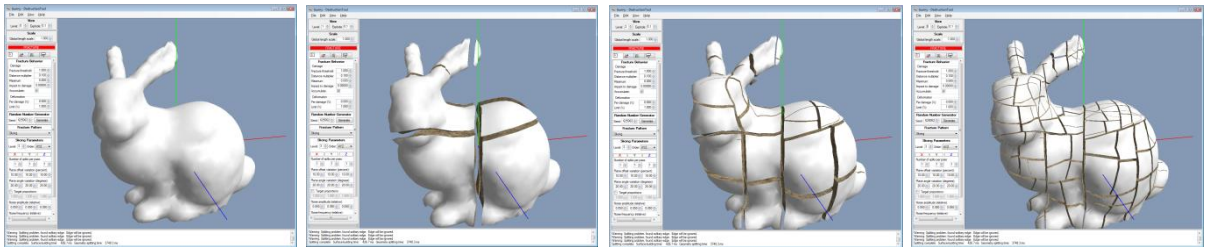
Bunny Example

Start the Destruction Tool and select File->Open Workspace to load the bunny destruction workspace file (bunny.dtw) from “externals/APEX/1.0/resources/destructible”.



The bunny is made of stone and can be completely destructed. The different destruction hierarchies can be viewed by changing the level from 0 .. 3. The Explode parameter allows the user to separate the different destructible pieces. A value of 0 means no separation.



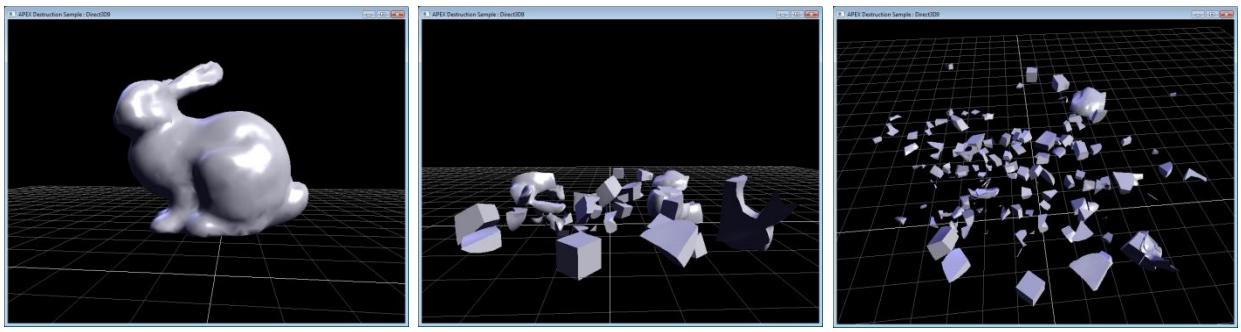


In order to change any of the destructible parameters, please refer to the APEX Destruction User Manual. Save the fractured bunny as a pda (PhysX Destructible Asset) file by clicking on File->Export.

The destructible bunny asset (bunny.pda) can now be viewed using the “SimpleDestruction_release.exe” program by using the command line:

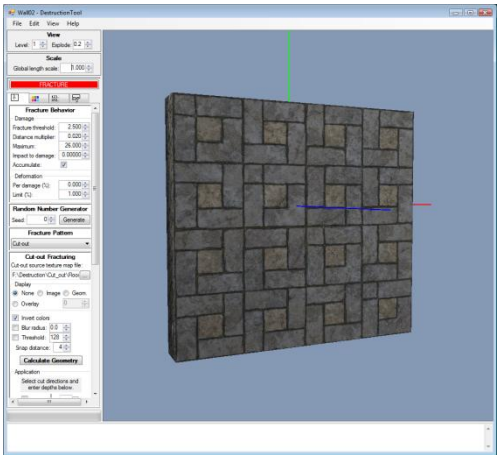
SimpleDestruction_release.exe –f bunny

and either shoot boxes at the bunny or right click on destructible assets with the mouse.

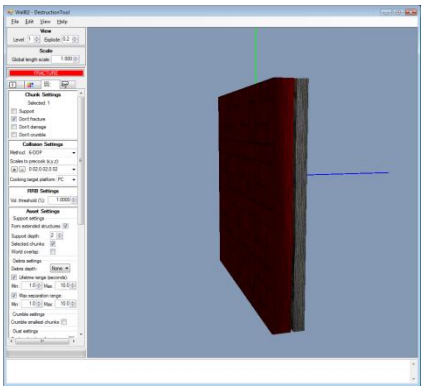


Chippable Wall Example

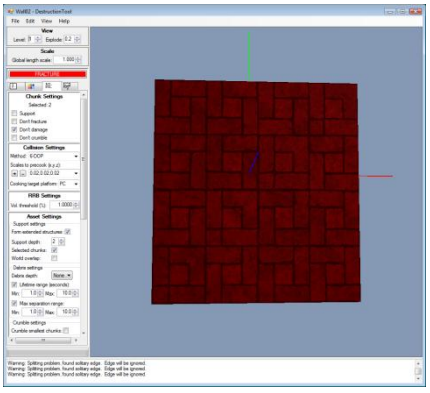
Load the workspace file called “wall.dtd” from “externals/APEX/1.0/resources/destructible” into the Destruction Tool. In this example we are using a fracture map to ensure that the destructible pieces match the brick texture. In addition the back wall is non-destructible, so it won’t affect gameplay.



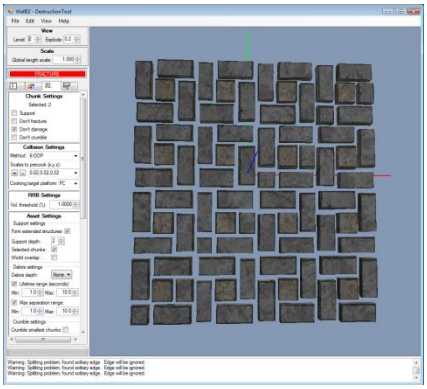
The destructible asset contains a backwall, which is non destructible (don’t fracture) ass well as the front wall, with different destruction hierarchies. The second destruction hierarchy level shows how the destructible pieces and the actual brick texture fit properly. The bricks can be further destructed, which is seen in Level 3.



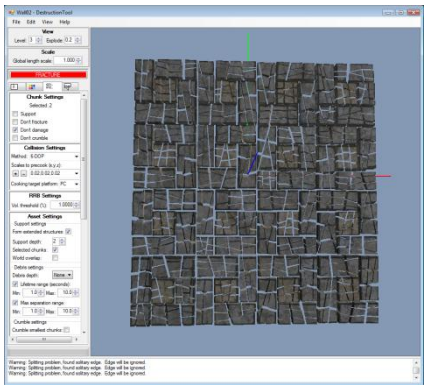
Non-destructible Backwall



Front Wall (Level 1)

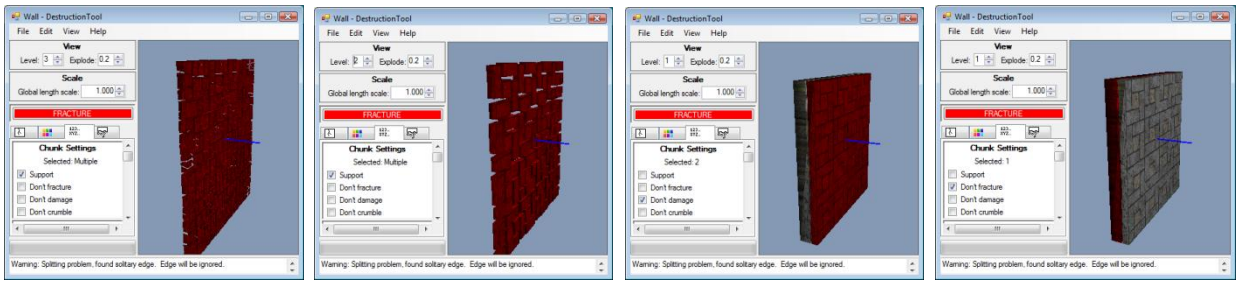


Front Wall (Level 2)



Front Wall (Level3)

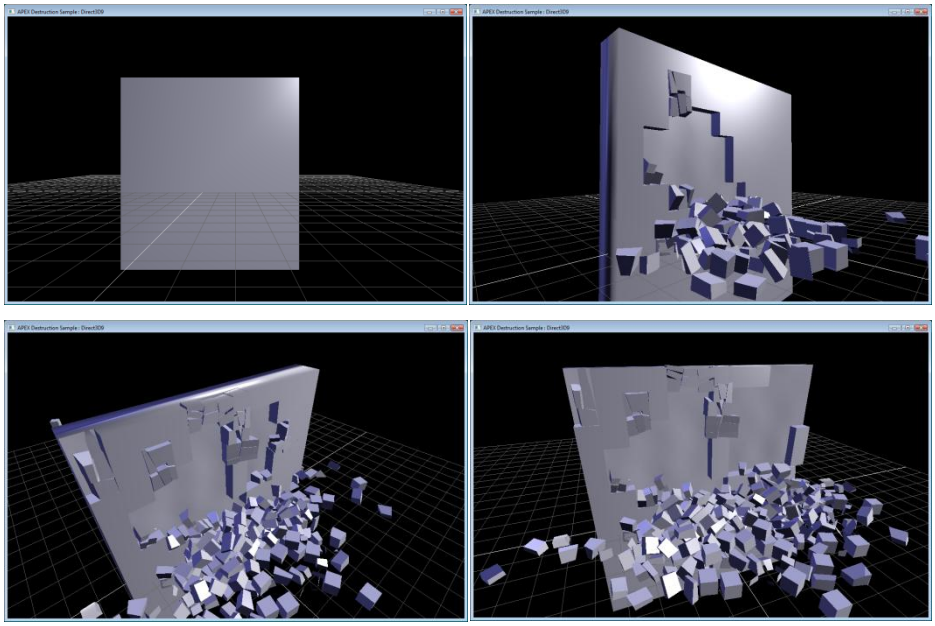
Note: If you press “Fracture” you will need to reassign the Chunk settings by selecting the front wall in Level 3 and enable “Support” for all chunks and same for Level 2. In case of Level 1 the front wall should be set to “Don’t Damage” and the back wall should be set to “Don’t fracture”. Right now hitting fracture will reset those values and cause the whole wall to be dynamic. This is a known issue and will be fixed.



To see the chippable wall in action, load it into the SimpleDestruction sample with the following command line:

SimpleDestruction_release.exe –f wall

and shoot boxes at it or right click with the mouse on the wall or on a destructed asset to break it down further.



Compiling the Sample Code

Launch Visual Studio 2005.

Open: "1.0/APEX/samples/compiler/vc8win32_physx_2.8.1/SimpleDestruction.sln"

Switch to the "release" configuration, and rebuild the solution.

Start without debugging (CTRL+F5)

Known Issues

This is a pre-beta release and contains several known issues which will be fixed soon:

Destruction Tool:

- Fracturing process can result in artefacts, if this happens choose a different “Seed” and reapply “Fracturing”.
- Fracturing process might abort with the message: ”Attempted to read or write protected memory. This is often an indication that other memory is corrupt”, which is ude to a splitting problem where the edge path is not consistent. IF this happens press ok and generate a different seed for fracturing.
- Documentation needs to be updated
- Include mode Samples
- Include runtime mode in tool so that settings can be tested immediately
- Destruction Module User Guide cannot be loaded through the Help Menu item
- Chunk Settings are cleared when hitting “Fracture”. Therefore they need to be reapplied before saving the physx destructible asset (pda).

Note: We are actually working on a much better tool called PhysXLab which will these issues.

SimpleDistruction :

- Texture loading is disabled
- Quitting the app will result in an error message about 2 memory leaks being detected.
- Help menu
- More command line options to place and change location/orientation and physx settings.
- Destruction stability

Notice

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