

REALFLOW 2.5 Lightwave 7 plug ins

Next Limit
support@nextlimit.com
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(RealWave plug-in information as addendum)

INSTALLATION STEP

1. Remove older Next Limit plug-ins.
2. Copy the NEXTLIMIT.P file to the Lightwave's plug-ins folder
3. Use the *Add Plugins* command to load the new plug-ins.
4. Note that the stored scenes using the old plug-ins may require to add the plug-ins again.
5. All the Next Limit plug-ins for Lightwave contains the prefix "NextLimit"

GENERAL DESCRIPTION

RealFlow 2.5 imports and exports different file formats:

TYPE OF DATA	IMPORT/EXPORT	FILES	PLUG-IN
RealFlow particles	REALFLOW TO LW	.bin sequence	Displacement
RealFlow meshes	REALFLOW TO LW	.bin sequence	Displacement+Replace.
SD scenes	LW TO REALFLOW	.sd file	Master (SD export)
RealFlow object motion	REALFLOW TO LW	.sd file	Master (SD import)
RealFlow wave surface	REALFLOW TO LW	.sd file	Displacement

Each frame of simulation is exported as a different numbered file for the particles and the meshes (i.e. Mesh00001.lwo, Mesh00002.lwo, etc.), and in a single .SD file for the object dynamics. The meshes can be exported in Lightwave LWO format and it is the recommended format for the Lightwave users.

In RealFlow 2.5 we have included the features of RealWave. The surface of RealWave is exported in a single SD file.

The common procedure involves:

1. Export your scene from Lightwave to RealFlow through an SD file.
2. Perform the simulation in RealFlow.
3. Import the simulation data (particles, meshes, object motion) with the plugins.

RealFlow Particle Loader

Object displacement (“NextLimit Particle loader”) + Object custom (“RealFlowParticleDisplay”)

Particle Loader is an Object Displacement plug-in (Item properties > Deformation > Add Deformation) that imports RealFlow / RealWave particles.

1. Add a NULL object.
2. Go to Object properties > Deform > Add displacement > “RealFlow particle” and open Options. Choose a RealFlow or RealWave particle file sequence (.bin extension).

The plug-in will automatically add the custom geometry plug-in “RealFlowParticleDisplay” to visualize the particles.

At this moment you should see the particles in the viewport. You may need to move the frame slider in order to see the particles. To render the particles you will need to use a **Volumetric Shader** like Hypervoxel [HV] or the Next Limit’s Flowtracer [FT].

1. Go to (Volumetrics > Add Volumetrics) and apply Hypervoxels [HV] or Flowtracer [FT]
2. [HV] Open Hypervoxels and activate the object. [FT] Open FlowTracer and choose the same .bin sequence (notice that you don’t need to load the particles in Layout in order to use Flowtracer).
3. [HV/FT] Probably there are no particles at frame 0, so go to frame 1 or beyond.
4. [HV/FT] Set an appropriate particle size. It is recommended to set a small radius initially.
5. Test render

Try different Hypervoxels or FlowTracer parameters.

Known issues:

In Hypervoxels, the “stretching direction” feature requires a very small strength value in order to work. We recommend 0.01 %

RealFlow particle motion loader

Motion modifier (“NextLimit particle motion”)

This plug-in loads the particle motion and apply it to any objects in the scene.

1. Open Motion Options and apply the “RealFlow particle motion” plug-in to any object
2. Open the plug-in options panel and Browse for a RealFlow particle sequence. This will automatically add the motion of the first particle in the sequence.
3. (optional) If you clone the object, the new object will acquire the motion of the next particle in the sequence (change the Particle leap value to make bigger jumps in the sequence).
4. (optional) Change the Frame offset to start in a different particle index.

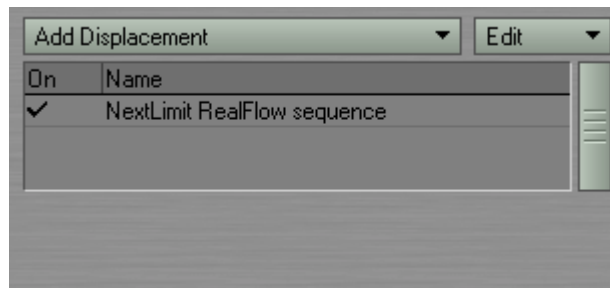
☑ RealFlow mesh loader

Displacement plug-in (“NextLimit RealFlow mesh”)

It is very important to follow this procedure in order to work with the RealFlow meshes properly. This implies a combination of a displacement and the Object Sequence plug-ins.

First of all, the meshes should be available in LWO format. Although this plug-in allows importing the mesh BIN format, you won't be able to reproduce the full process with BIN files.

1. Import the first LWO mesh in the sequence and apply the “Next Limit RealFlow sequence” displacement plug-in.

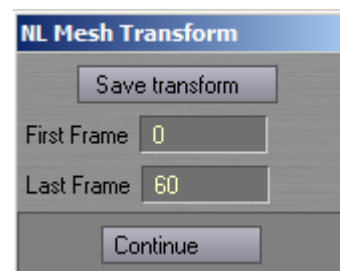


The Object Sequence plug-in will be automatically applied.



At this point check that the meshes are correctly updated in the layout at different frames. You can render a single frame (F9) but DO NOT RENDER THE FULL SEQUENCE YET (F10). Adjust the surface properties of the mesh as desired.

2. For rendering the full sequence with the latest surface changes, **all the objects in the sequence must be transformed and saved. Otherwise the surface properties will be lost.** In the process all the objects in the sequence will include the same surface. OPEN the options panel of the RealFlow mesh sequence plug-in. Set the INITIAL and END frames and press SAVE TRANSFORM.



You only need to do this step when you want to render the sequence using the same surface.

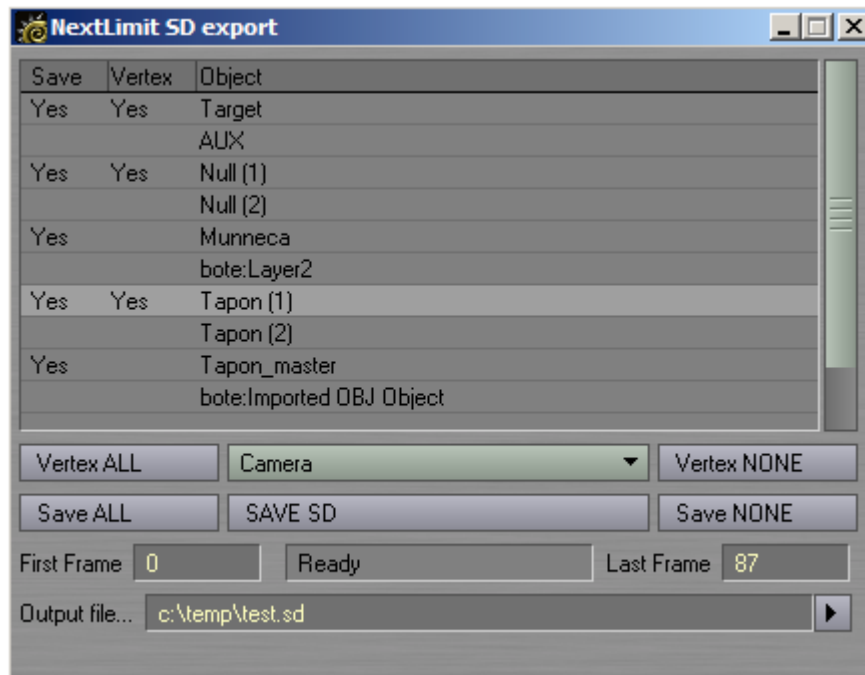
3. When all the objects have been transformed, you can render the full sequence.

The LWO mesh file contains some additional information stored by RealFlow as weight maps. When several fluids are used to create a mesh, a weight map is stored for each fluid, so you can properly mix materials. The motion blur information is also stored and handled by this plug-in.

☑ Next Limit Scene SD saver Master plug-in (“NextLimit SD export”)

This plug-in saves the scene information into a SD file, which can be loaded in RealFlow and RealWave. In order to export an SD file, follow the next steps:

1. Apply the “Next Limit SD export” master plug-in located in (Layout > Plug-ins > Master plug-ins) or in (Scene > Master plug-ins). Open the plug-in options window.
2. In the object list, click the first column (“Save”) to add that object to the SD file, and the second column (“Vertex”) to choose between non-vertex or vertex mode. Remember that you need to export objects in vertex mode when they contain deformation. Otherwise, for normal key frame animation, don’t set this flag. The vertex mode will increase the information saved to the SD file since all the vertices will be exported for every frame.
3. Click OUTPUT FILE to set the SD file where the data will be saved.
4. (Optional) Select the CAMERA that will be exported in the SD scene.
5. Click SAVE SD to create the SD file.
6. You can repeat the operation as many times as you want. Just make the changes in the scene and click SAVE SD again.
7. Other shortcut buttons are: SAVE ALL/NONE OBJECTS to set or clean the output flag for all the objects; VTX ALL/NONE OBJECTS to set or clean the vertex flag for all the objects.



Next Limit Scene SD loader

Master plug-in (“NextLimit SD loader”)

This plug-in load the object motion information included in a SD file. The SD file is created by RealFlow when a rigid body simulation is performed.

1. Apply the “Next Limit SD loader” master plug-in located in (Layout > Plug-ins > Master plug-ins) or in (Scene > Master plug-ins). Open the plug-in options window.
2. Choose an SD file.

The plugin will keyframe all the available objects in the scene that match with the objects stored in the SD file.

Next Limit RealWave surface loader

Displacement plug-in (“NextLimit RealWave surface”)

This plug-in loads the RealWave surface information included in a SD file. You only need to load the first .lwo file included in the data folder (RealFlow will always create one single .lwo file) and apply this plug-in to create the surface displacements.

F.A.Q.

How do I import the meshes?

You can load a sequence of LWO files created in RealFlow. You will have to apply the RealFlow mesh sequence plug-in.

How do I mix surfaces in the mesh?

Use the weight maps stored in the object to assign different materials for different fluids.

How do I import the particles and render them?

Use the NextLimit particle import plug-in. In order to render them you will need a volumetric shader like Lightwave's Hypervoxel or Next Limit's Flowtracer. You can also use the NextLimit particle motion plug-in and clone an object to make them follow the particles.

How do I render with Hypervoxels?

Import the particles with the NextLimit particle import plug-in, and apply Hypervoxels as usual.

How do I export geometry to RealFlow or RealWave?

Use the SD export plug-in to create an SD file containing the animated geometry.

I am getting an error saying that it cannot find a plug-in in NEXTLIMIT.P file, why?

The name of some plug-ins have changed recently. You have to add again the plug-ins.

ADDENDUM: REALWAVE PLUG-INS (for RealWave standalone application)

RealWave exports three different kinds of files: **surface meshes (.BIN)**, **object motion data (.DYN)** and **particle data (.BIN)**.

RealWave surface binary loader

Object Displacement ("NextLimit RealWave surface")

This plug-in will reproduce the surface motion calculated in RealWave.

1. In RealWave, turn on the mesh output option in the Surface panel (small disk icon).
2. Set prefix name and output directory.
3. Make sure the environment is set to Lightwave compatibility (upper toolbar).
4. Run the simulation and make sure that RealWave is exporting a sequence of files.
5. In Lightwave, load the LWO file that RealWave have exported.

Apply the "RealWave surface" plug-in to this object and point to the output directory (where the files have been saved). The surface will reproduce the RealWave motion.

RealWave object motion loader

Object displacement ("NextLimit object object")

This plug-in will reproduce the object motion calculated in RealWave.

1. In RealWave, turn on the DYN output option for each object you want the motion to be exported (Objects panel). Set the file name.
2. Make sure the environment is set to Lightwave compatibility (upper toolbar).
3. Run the simulation and make sure that RealWave is exporting the motion files (DYN).

In Lightwave, apply to your object the "RealWave object" plug-in, open the options panel and choose the DYN file. The object will acquire the RealWave calculated motion.