

# Cache Converter

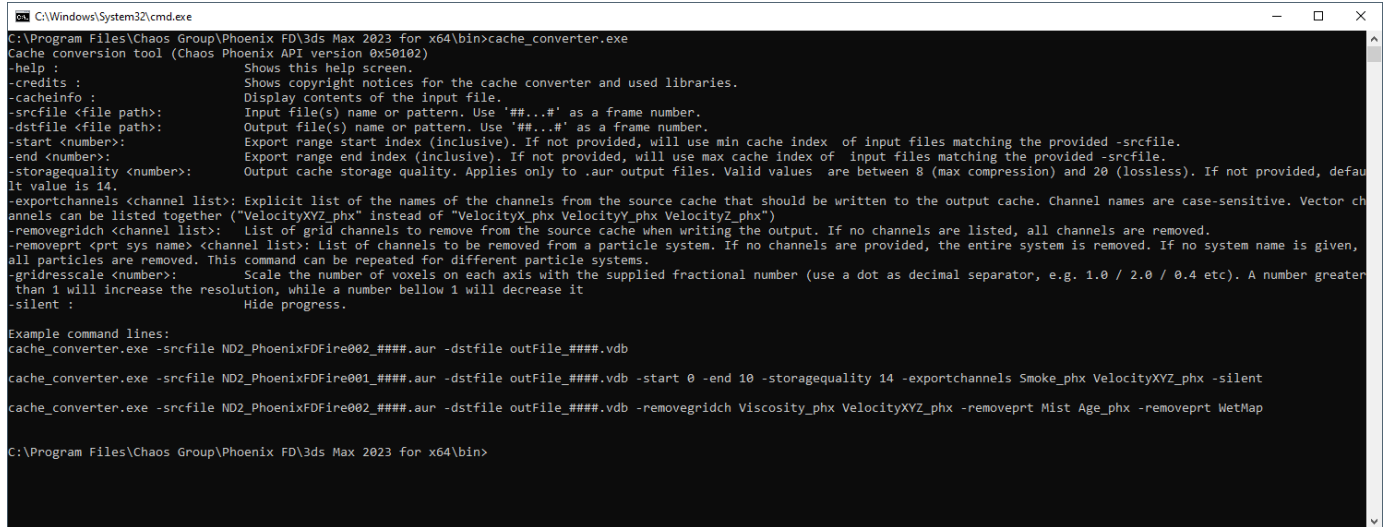
This page provides information on the Cache Converter tool.

## Overview

The `cache_converter` command-line utility can convert already existing `.aur`, Field3D or PRT cache sequences to OpenVDB sequences without simulating.

In order to render them faster with Phoenix's shader or in the V-Ray VolumeGrid, you can also convert OpenVDB or Field3D cache sequences to `.aur`.

Using the Cache Converter, you can also strip away unused grid channels from `.aur`, OpenVDB or Field3D files, while converting them to `.aur` or OpenVDB.



```
C:\Windows\System32\cmd.exe
C:\Program Files\Chaos Group\Phoenix FD\3ds Max 2023 for x64\bin>cache_converter.exe
Cache conversion tool (Chaos Phoenix API version 0x50102)
-help : Shows this help screen.
-credits : Shows copyright notices for the cache converter and used libraries.
-cacheinfo : Display contents of the input file.
-srcfile <file path>: Input file(s) name or pattern. Use '##...#' as a frame number.
-dstfile <file path>: Output file(s) name or pattern. Use '##...#' as a frame number.
-start <number>: Export range start index (inclusive). If not provided, will use min cache index of input files matching the provided -srcfile.
-end <number>: Export range end index (inclusive). If not provided, will use max cache index of input files matching the provided -srcfile.
-storagequality <number>: Output cache storage quality. Applies only to .aur output files. Valid values are between 8 (max compression) and 20 (lossless). If not provided, default value is 14.
-exportchannels <channel list>: Explicit list of the names of the channels from the source cache that should be written to the output cache. Channel names are case-sensitive. Vector channels can be listed together ("VelocityXYZ_phx" instead of "VelocityX_phx VelocityY_phx VelocityZ_phx")
-removegridch <channel list>: List of grid channels to remove from the source cache when writing the output. If no channels are listed, all channels are removed.
-removeprt <pvt sys name> <channel list>: List of channels to be removed from a particle system. If no channels are provided, the entire system is removed. If no system name is given, all particles are removed. This command can be repeated for different particle systems.
-gridresscale <number>: Scale the number of voxels on each axis with the supplied fractional number (use a dot as decimal separator, e.g. 1.0 / 2.0 / 0.4 etc). A number greater than 1 will increase the resolution, while a number below 1 will decrease it
-silent : Hide progress.

Example command lines:
cache_converter.exe -srcfile ND2_PhoenixFDFire002_####.aur -dstfile outFile_####.vdb

cache_converter.exe -srcfile ND2_PhoenixFDFire001_####.aur -dstfile outFile_####.vdb -start 0 -end 10 -storagequality 14 -exportchannels Smoke_phx VelocityXYZ_phx -silent

cache_converter.exe -srcfile ND2_PhoenixFDFire002_####.aur -dstfile outFile_####.vdb -removegridch Viscosity_phx VelocityXYZ_phx -removeprt Mist Age_phx -removeprt WetMap

C:\Program Files\Chaos Group\Phoenix FD\3ds Max 2023 for x64\bin>
```

Default Path: `C:\Program Files\Chaos Group\Phoenix FD\3ds Max 20xx for x64\bin\cache_converter`

## Mandatory Arguments

**-srcfile** – Specifies the input `.aur`, `.vdb` or `.f3d` file(s) name or pattern. You can use `"####"` as a frame number and the files will be treated as a sequence.

The **drag-and-drop** functionality can be used to convert `.aur` or `.vdb` files without opening the command line. You can drop the files on the **cache\_converter.exe** and they will be converted and saved in the input directory.

## Options

**-dstfile** – Specifies the output `.vdb` or `.aur` file(s) name or pattern. You can use `"####"` as a frame number and the files will be treated as a sequence.

If **-dstfile** argument is not added, the source file folder will be used as a default output destination.

If you want to check the content of a cache file with **-cacheinfo**, without converting it, you won't need the **-dstfile** argument at the end of the command.

**-help** – Shows the available commands and the version of the tool.

**-credits** – Shows the copyright notices for the cache converter and used libraries.

**-cacheinfo** – Displays the stored information about the selected cache files.

**-start** – Specifies the starting frame of the sequence. If it's not provided, the tool will automatically scan the directory and find the minimal index.

**-end** – Specifies the end frame of the sequence. If it's not provided, the tool will automatically scan the directory and find the maximal index.

**-storagequality** – Allows you to choose the compression quality of Grid and Particle data when the output **-dstfile** is `.aur`. Valid values are between 8 (max compression) and 20 (lossless). If not provided, default value is 14.

**-exportchannels** – Allows you to choose which channels to be written to the output **-dstfile**. Using this option, you can strip away unused channels from the cache files, reducing their size, and also making them faster to load. If not provided, all existing channels will be written.

The available channel names in .aur caches are as follows (note that names are case-sensitive):

- Temperature\_phx
- Smoke\_phx
- Speed\_phx
- VelocityX\_phx
- VelocityY\_phx
- VelocityZ\_phx
- ColorR\_phx
- ColorG\_phx
- ColorB\_phx
- Fuel\_phx
- WaveletEnergy\_phx
- AdvectionOriginX\_phx
- AdvectionOriginY\_phx
- AdvectionOriginZ\_phx
- WaveletU\_phx
- WaveletV\_phx
- WaveletW\_phx
- Viscosity\_phx
- TexU\_phx
- TexV\_phx
- TexW\_phx

You can also use these aliases for the 3 components of vector channels:

- VelocityXYZ\_phx
- ColorRGB\_phx
- AdvectionOriginXYZ\_phx
- WaveletUVW\_phx
- TexUVW\_phx

**-removegridch** – Allows you to remove grid channels from the source cache when writing the output. If no channels are listed, all channels are removed.

**-removeprt** – Allows you to remove channels from a particle system when writing the output. If no channels are provided, the entire system is removed. If no system name is given, all particles are removed. This command can be repeated for different particle systems.

**-gridressscale** – Decrease or increase the grid resolution of the cache files. Values below 1.0 decrease the resolution, while values above 1.0 increase it. Please use a dot as the decimal symbol (e.g. 0.5 / 1.1 / 2.4 etc.). The provided number scales the number of voxels per each axis, so of you use "-gridressscale 2.0", this will increase twice the voxels along the X axis, the Y axis and the Z axis, resulting in 8 times more voxels.

**-silent** – Don't show messages with the conversion progress.

## Examples

---

- **cache\_converter.exe -srcfile ND2\_PhoenixFDFire001\_####.aur** – Converts all of the cache files matching the given name.
- **cache\_converter.exe -srcfile ND2\_PhoenixFDFire001\_####.aur -dstfile outFile\_####.vdb -start 0 -end 10** – Converts the specified range of cache files matching the given name.
- **cache\_converter.exe -srcfile ND2\_PhoenixFDFire001\_####.aur -dstfile outFile\_####.vdb -start 0 -end 10 -storagequality 14 -exportchannels Smoke\_phx VelocityXYZ\_phx -silent** – Converts the specified range of cache files matching the given name, and saves only the Smoke and Velocity channels. All other available channels will not be written to the OpenVDB cache.
- **cache\_converter.exe -srcfile ND2\_PhoenixFDFire002\_####.aur -dstfile outFile\_####.vdb -removegridch Viscosity\_phx VelocityXYZ\_phx -removeprt Mist Age\_phx -removeprt WetMap** – Converts all cache files matching the given name, and removes the Viscosity and Velocity grid channels, and the Age channel for the Mist particle system, and the WetMap particle system. All other available channels will be written to the OpenVDB cache.
- **cache\_converter.exe -srcfile ND2\_PhoenixFDFire001\_####.aur -cacheinfo** – Displays the content of the selected cache files.