

daz_dhdm_gen (v0.0.6) documentation

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1 Main settings

Figure 1 shows the “Main settings” subpanel. For the operators to work, you must specify:

- **Working directory:** The addon will use this directory for temporary files and/or output files, so you have to make sure that you have the necessary permissions on it. It’s highly recommended for this directory to be exclusively used by the addon, since the addon can delete and overwrite files when needed.
- **Unit scale:** Scale to convert from daz’s units to Blender’s units. If you are using Blender’s default scene’s units, you can leave this value at its default value (0.01).
- **Base mesh:** daz base mesh (in the image’s case, the “genesis 8.1 female” base mesh).
- **Matching files directory:** Directory where matching files will be stored (see details in [Generating matching files](#) section). These files are strictly necessary for the correct generation of .dhdm files from Blender meshes.

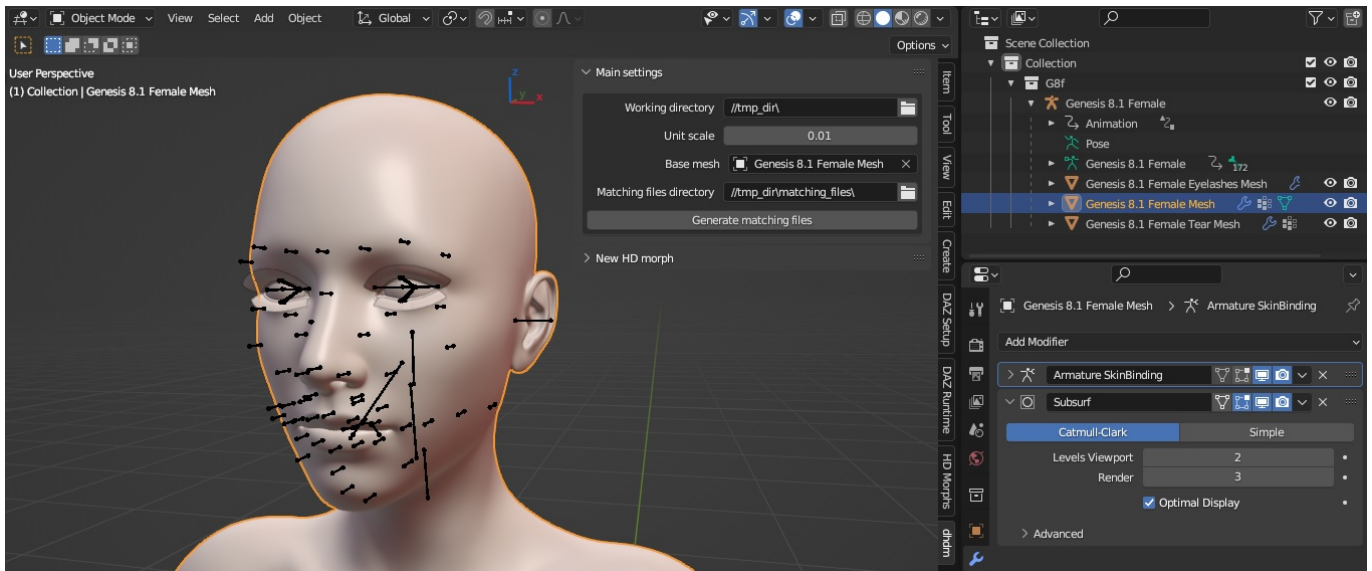


Figure 1: Main settings.

It’s highly recommended to have Blender’s console open while using this addon’s operators. To do so, in Blender, go to Window>Toggle System Console.

1.1 Generating matching files

For this addon to work properly, the generation of matching files is necessary. These files are .json files which contain the vertex order mappings from Blender meshes to daz meshes, at every subdivision level up to a user-specified level. As such, they depend on the particular type of daz mesh being used (e.g. Genesis 8 Female, Genesis 3 Male, etc.).

It's only necessary to perform this step once per type of daz mesh being used, and the files can be reused between .blend files as long as the daz mesh type is the same. Keep in mind that only the daz mesh type matters for this step, not the particular shape. For example, a Genesis 8 Female figure with “baked” base morphs has the same matching files as a Genesis 8 Female figure without any base morphs.

To generate the matching files, press the **Generate matching files** button and specify the maximum subdivision level. The console will show the progress.

There are two groups of matching files, depending on how the HD mesh will be created in Blender:

1. The first group corresponds to creating the HD mesh by using a multiresolution modifier on the base mesh, and editing/sculpting that mesh up to some level of subdivision. This mode doesn't require any additional addon. In the **Matching files directory**, these files have “mr” as a suffix in their filenames.
2. The second group corresponds to generating the HD mesh with possibly “baked” HD morphs by using the *daz_hd_morphs* addon (version 0.88.6+), then reconstructing the subdivision levels with a multiresolution modifier, and then further editing/sculpting that mesh as in the previous mode. This mode requires that addon to be installed and enabled. If the addon is not enabled when generating the matching files, this group of matching files won't be generated. In the **Matching files directory**, these files have “mrr” as a suffix in their filenames.

2 New HD morph

Figure 2 shows the **New HD morph** panel. In this example, the base mesh collection was duplicated, then the original subdivision modifier from the base mesh was removed and a multiresolution modifier was added instead. Lastly, the mesh was subdivided two times through the multiresolution modifier.

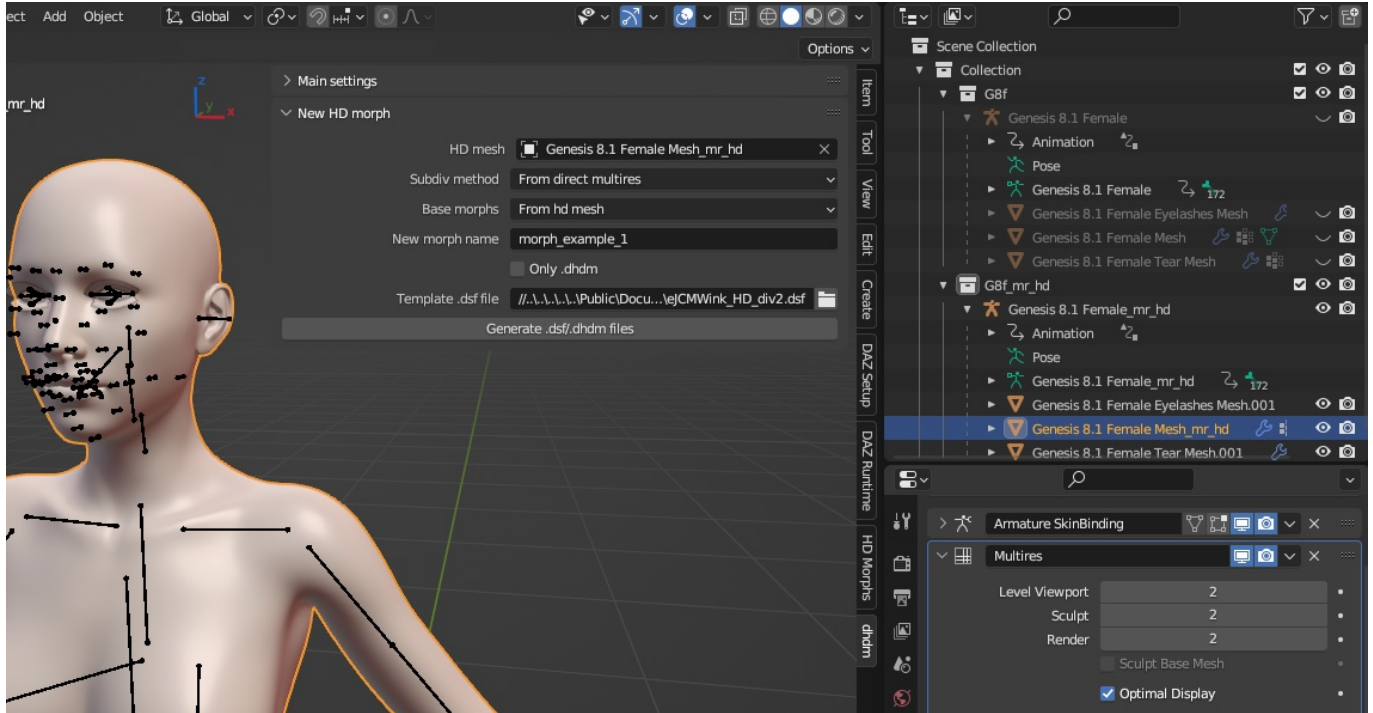


Figure 2: New HD morph panel.

- **HD mesh:** The HD mesh where the HD morph will be defined. How this HD mesh is created depends on the mode being used, as described in the [Generating matching files](#) section. In Figure 2 the first mode is used.
- **Subdiv method:** Defines the mode being used, as described in the [Generating matching files](#) section. The first mode corresponds to “From direct multires”, while the second to “From daz_hd_morphs multires”.
- **Base morphs:** Indicates how to obtain the base morphs. If set to “From hd mesh”, the geometry of the **HD mesh** when the multiresolution modifier is disabled is interpreted as the base morph data, relative to the **Base mesh**. If set to “From morphed base mesh”, an additional mesh (**Morphed base mesh**) can be provided to more accurately obtain the base morph data. This could be useful when using the second mode (see [Generating matching files](#) section), since the multiresolution modifier’s subdivision reconstruction algorithm doesn’t reconstruct the base mesh perfectly. In the example being illustrated, this is not necessary since the mode being used is the first one.
- **Morphed base mesh:** See previous item.
- **New morph name:** Name to use for the new morph. Also defines the filename of the .dsf file (if any) and .dhdm file to be generated.

- **Only .dhdm:** If checked, no .dsf file is generated. Consequently, the generated .dhdm file will need to be manually defined by the user in the .dsf file that will make use of that .dhdm data. If unchecked, a **Template .dsf file** must be provided (the original file is never modified), and a pair of .dsf and .dhdm files will be generated. The .dsf file will contain the base morph data and refer to the .dhdm file for HD data (in its “hd_url” field). Moreover, the original data of the .dsf file will be modified to replace the original name with the **New morph name** provided. All other .dsf data (like formulas referring to other .dsf files) will be copied from the **Template .dsf file**.
- **Template .dsf file:** See previous item. For this example, the file “eJCMWink_HD_div2.dsf” will be used (which could be found in “.../My DAZ 3D Library/data/Daz 3D/Genesis 8/Female/Morphs/DAZ 3D/Expressions”, depending on your installation).

For this example, the **HD mesh** with the multiresolution modifier was sculpted, as shown in Figure 3.



Figure 3: Sculpted HD mesh.

To generate the .dsf file (if any) and the .dhdm file, press the **Generate .dsf/.dhdm files** button. The console will show the progress, and the new files will be placed in a subdirectory called “new_morphs” within the **Working directory**.

To check that the morph is working properly, the files could be placed in the same directory where the **Template .dsf file** is, so daz can detect them. For this example that would be the directory mentioned above. Next, the Genesis 8.1 Female figure is loaded in daz and the new morph is activated (by dialing the controller from the **Template .dsf file**, in this case “Wink HD”), as shown

in Figure 4. Notice how the original morph “eJCMWink_HD_div2” was disabled to show only the effect of the new morph (“morph_example_1”).

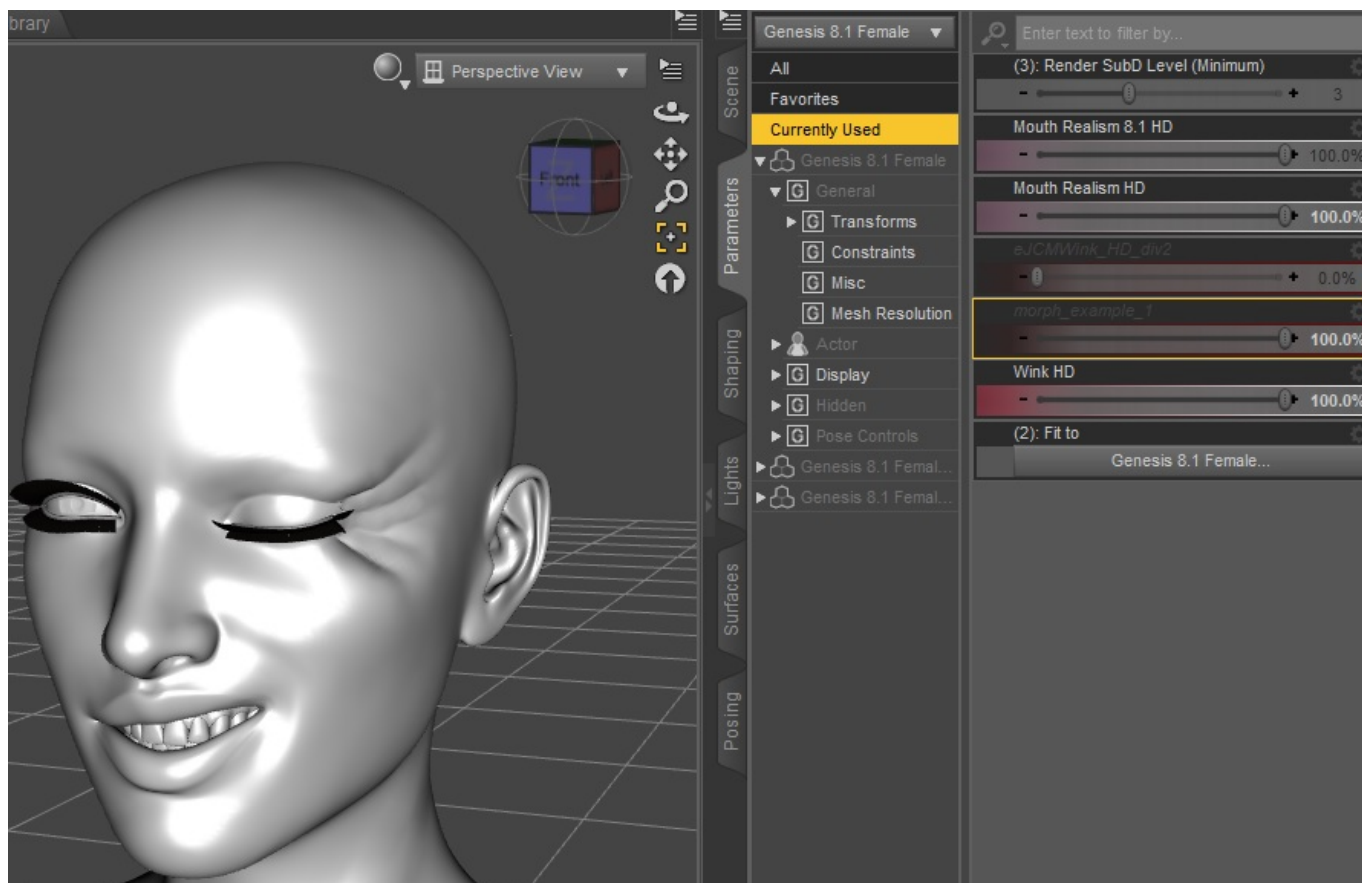


Figure 4: Generated HD morph in daz with 2 levels of subdivision.

There are a few things to keep in mind in this quick example. First, because the base mesh wasn’t sculpted, the generated morph only contains HD data (we could have used the “Apply Base” button of the multiresolution modifier to transfer some deformation to the base mesh). Second, for this example, the mesh was quickly sculpted in the default pose although ideally you would want to sculpt in the pose where the morph will be active (in this case the pose defined by the “Wink HD” Expression, which is active in Figure 4).

If you are authoring your own .dsf file to use as **Template .dsf file**, the same considerations apply.

Since the new morphs are valid daz HD morphs, they can also be used in Blender with the *daz_hd_morphs* addon. Refer to that addon’s documentation for details.

3 Step by step walkthroughs

3.1 Creating new HD morph starting from already HD morphed mesh

This example shows how you can create a new HD morph starting from an already HD morphed mesh. This corresponds to the second mode described in the [Generating matching files](#) section.

1. Install and enable the *import_daz* addon, the *daz_hd_morphs* addon (version 0.88.6+), and this addon. Be sure to get the latest versions of them suitable for your Blender installation. These examples use Blender 3.6.0.
2. The figure which will be used is the base genesis 8.1 female. With *import_daz*, use the “Easy Import daz” button and select the base genesis 8.1 female .duf (see *import_daz* documentation for details about how to do this step if you are not familiar with it). Remove the subdivision modifier from the imported mesh. Set this mesh as the **Base mesh** in both the *daz_hd_morphs* addon and this addon.
3. Generate the matching files as described in the [Generating matching files](#) section, setting max subdivisions to 2. Be sure that the matching files with “mrr” suffix are being generated.
4. Next, press the “Import_Expressions” button of the *import_daz* addon and select “Wink_HD” and “Wink_HD_div2” (if you don’t have these, any other expression with HD details should work).
5. With *import_daz*, pose the mesh by setting the “Wink HD” Expression to 1.
6. With the *daz_hd_morphs* addon, generate an HD mesh as shown in Figure 5. You can add the morph you need to the Morph Files list by pressing “Add base morph files” in the menu you can access from the down arrow in the upper right corner. For more details on how to use this addon, refer to that addon’s documentation.
7. If successful you should have an HD mesh with the HD morph baked in. Rename the “hd_collection” collection to “hd”, the hd mesh to “hd_mesh”, and the base mesh’s collection to “base”.
8. Add a multiresolution modifier to the generated hd mesh, and press the “Rebuild Subdivisions” button of the modifier. Notice how disabling the multiresolution modifier results in a base mesh that doesn’t exactly match the real base mesh.
9. To address the previous issue, duplicate the “base” collection, call the new collection “base_morphed”, and rename the duplicated base mesh in that collection to “base_morphed_mesh”. Apply the shape keys of this mesh and its armature modifier.
10. Delete the shape keys of the base mesh in the “base” collection, and then apply its armature modifier. Applying the armature modifiers in this step and the previous one is needed in this example because we generated the HD mesh posed (by setting **Base export modifiers** to “All but shape keys” in Figure 5), to get a better idea of the final look of the morph during sculpting. If the HD mesh hadn’t been posed, the armature modifiers wouldn’t need to be applied.
11. Sculpt or edit the hd mesh (called “hd_mesh”), which should already have the HD morph on it, further.

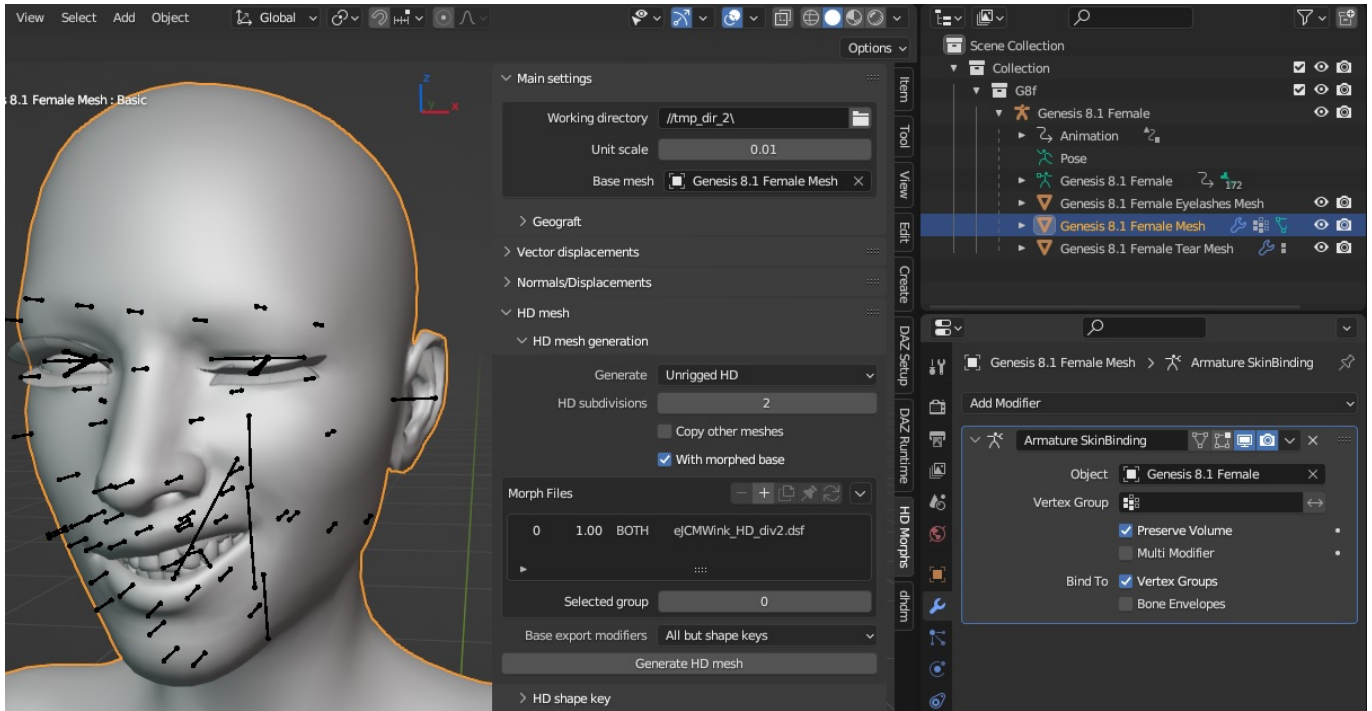


Figure 5: Settings for HD mesh generation with *daz_hd_morphs* addon.

12. Figure 6 shows the scene with the sculpted hd mesh and the settings to use for the generation of the .dhdm and .dsf files. Notice that we use the original morph .dsf file as **Template .dsf file**. Unhide all meshes and press the button to generate the .dhdm and .dsf files. Within the **Working directory**, the files should have been created in the “new_morphs” subdirectory.
13. Finally, to check that the morph is working properly, the files could be placed in the same directory where the **Template .dsf file** is, so daz can detect them. Next, the Genesis 8.1 Female figure is loaded in daz and the new morph is activated (by dialing the controller from the **Template .dsf file**, in this case “Wink HD”), as shown in Figure 7. Notice that the original morph, “ejCMWink_HD_div2”, was disabled to show only the effect of the new morph (“morph_example_2”).

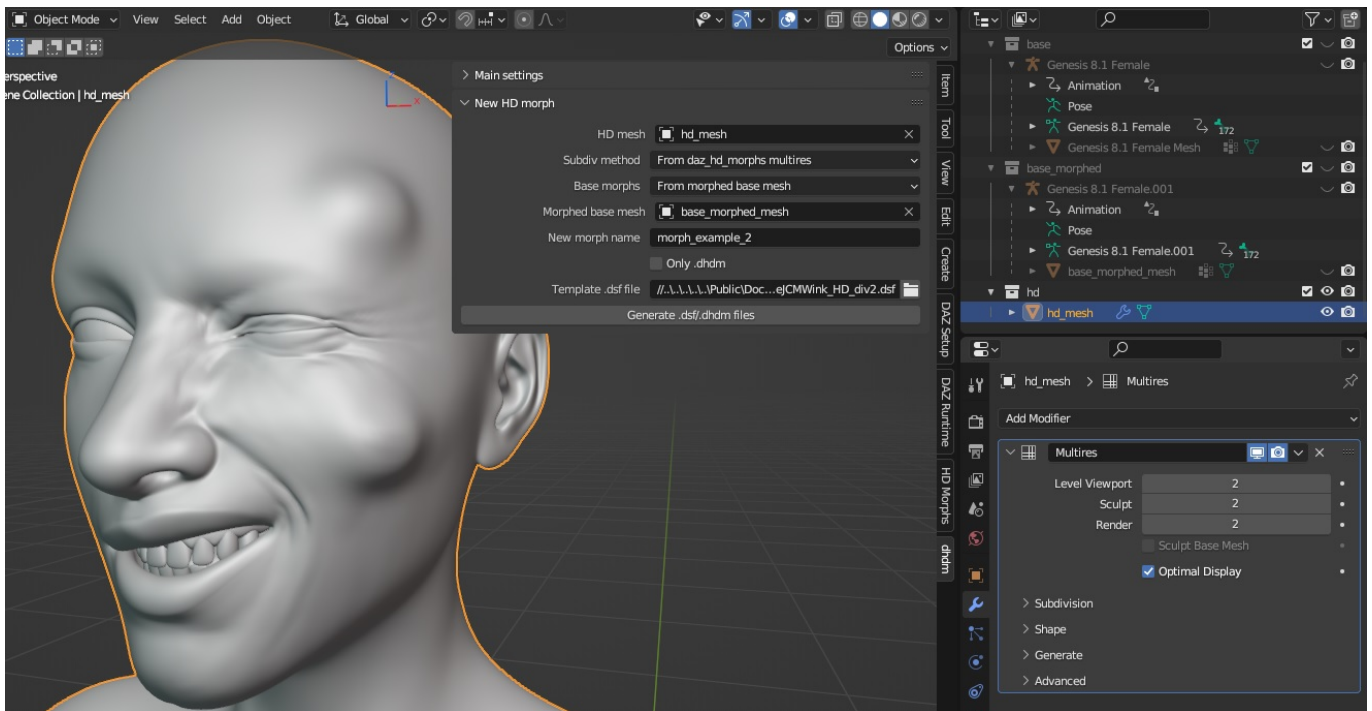


Figure 6: Settings to use to generate .dhdm and .dsf files (all meshes should be unhidden beforehand).

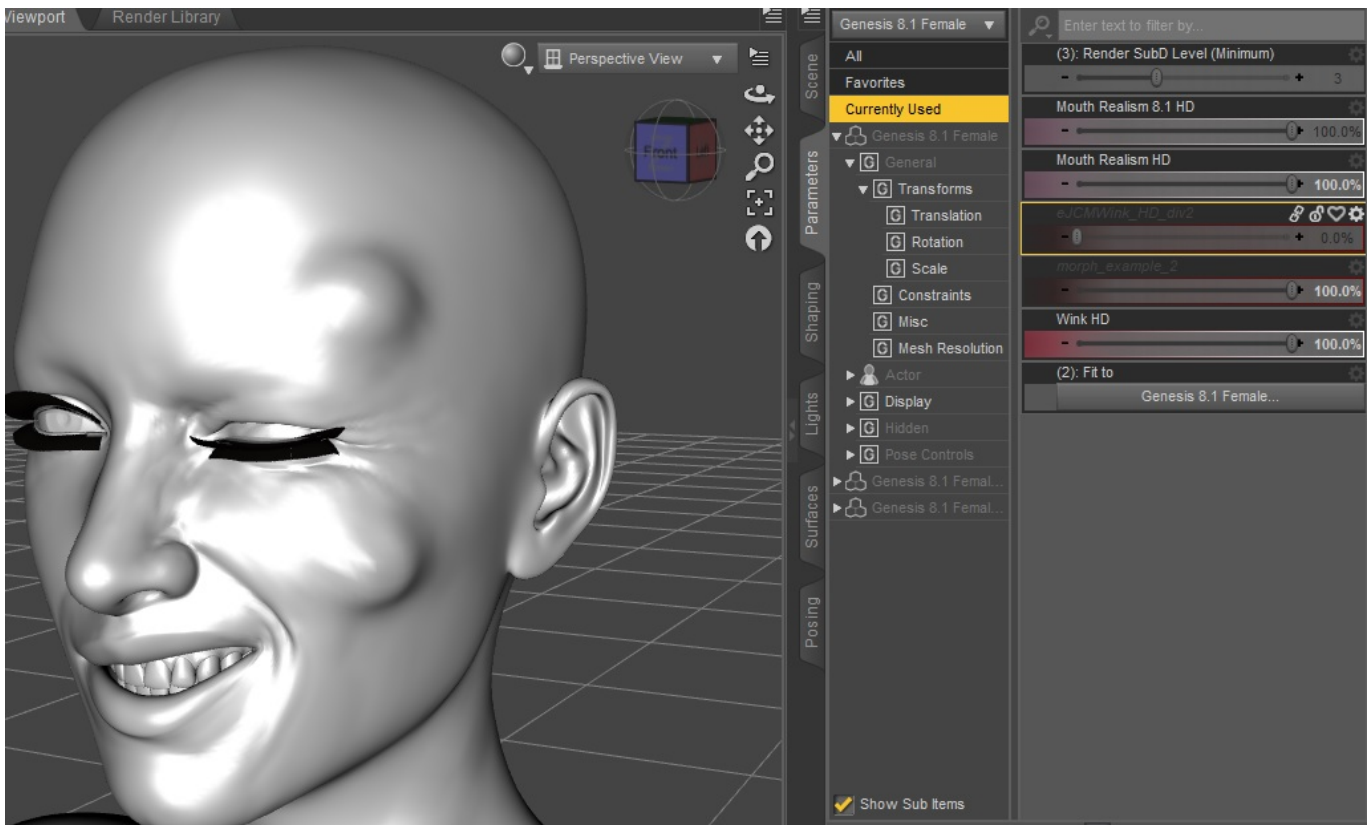


Figure 7: Generated HD morph in daz with 2 levels of subdivision.