

# Models

- Ski Files

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This information is taken from resources for Perfect World. While Perfect World and other Angelica engine games are very similar there may be some differences. This information needs to be confirmed for Ether Saga.

## General File Structure

Offset	Name	Data Size	Typ. Values	Meaning	Comments
0x0000	moxbiksa[8]	CHAR	"MOXBIKSA"	file type identifier	Ski BMOX
0x0008	ski_type	DWORD	8 or 9		Type 9 has bone names listed, type 8 doesn't
0x000C	mesh_count[4]	DWORD	1,0,0,0 or 2,0,0,0	number of meshes	Defines a <code>vertex_type</code> as well. (index to <code>mesh_count[]</code> ); so <code>vertex_type</code> goes (0,1,?,?)
0x001C	tex_count	DWORD	1 or 2	number of textures	
0x0020	mat_count	DWORD	1 or 2	number of materials	
0x0024	num_bips	DWORD	4 or more	number of "bones"	if ski_type=8, always no bips (but num_bips=4)
0x0028	(unknown_2)	DWORD	0		only value 0 spotted currently
0x002C	(type_mask)	DWORD	41 or 43 or ...	num.Bones in *.bon	Seems to identify the type of Avatar; Human_Female= 41, Demon_Female = 43, Human_Male = 35, ...

Offset	Name	Data Size	Typ. Values	Meaning	Comments
0x0030	zero_60	DWORD	0,0,0,...		just 15 zero DWORDs (or 60 zero BYTES)

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IF ski_type == 9: { { { {
    Bone Names {
    0x006C Repeat [num_bips]: { { {
    bone_len DWORD e.g. 12 string len (bone name)
    bone_name[len] CHAR "Bip01 L Foot" the bone name string no trailing /0
    } } } }
    {
    Textures {
    0x006C + (bones) Repeat [tex_count]: { { {
    tex_len DWORD e.g. 16 number of bytes, not chinese letters
    tex_name[len] CHAR ".dds" Texture file name (maybe unicode)
    } } }
    Materials {
    Repeat [mat_count]: { { {
    MatHeader String-z "MATERIAL: "/0 Header for Mat.Block 10 bytes + trail-/0
    mat_values[16] FLOAT 1, 1, 1, 1, 1, 1, 1, 1, (unknown) could be a matrix ...
    0, 0, 0, 1, 0, 0, 0, 1 (unknown) .. or other float parameters
    scale_param FLOAT 9.999 or 19,999 or 10.0 a scaling factor? (a "0" was spotted too)
    is_clothing BYTE 0x00 or 0x01 if fashion or not? could be boolean
    } } }
    Meshes {
    Repeat [mesh_count]: <<<
    obj_len DWORD e.g. 8 string len (mesh_obj)
    mesh_obj[len] CHAR "_0" name of the model no trailing /0
    tex_index LONG_32 0 or 1 or ...? index to texture none if -1
    mat_index LONG_32 0 index to materials
    IF vertex_type == 1: { { { vertex_type: (see "mesh_count[]" above)
    extra_data[4] BYTE (unknown)
    } } }
    vertex_count DWORD 1235 number of vertices
    faceverts_count DWORD 6084 number of faceverts faceverts_count = 3*face_count, because always triangles
    {
    Vertices {
    Repeat [vertex_count]: { { {
    vertex_position[3] FLOAT (0.05, 1.0, -0.234) vertex coordinate -X, -Z, Y
    IF vertex_type == 0: { { {

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[vertex\_weight[3] FLOAT (0.7, 0.3, 0.0) bone influence ? seem 2nd value is always between 1st and 3rd

[bone\_index[4] BYTE (3, 12, 0, 27) list of 4 “bones” the order must be kept; don't sort!

}]}}[[]]

[vertex\_normal[3] FLOAT [vertex normal vector]

[vertex\_UV\_coord[2] FLOAT [u/v-coordinate of vertex U, 1-V

[[]}]}}[[]]

[Faces[[]]

[Repeat [face\_count]:[{ { [face\_count = faceverts\_count / 3

[vertex\_index[3] USHORT\_16 (123, 122, 144) 3 indices to vertices]

[[]}]}}[[]]

[(End Meshes)]>>>[[]]

[[]]

[(EOF]