

Creature Conversion Tutorial

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Contact: Please email (not PM) me through the Morroblivion forum.

Credits: I got a lot of help from the tutorials by Saiden Storm on custom creatures. As well as the tutorials on CS wiki about Custom Creatures in Blender and 3ds max.

License: You may freely distribute this tutorial as long as you do not modify it.



Preparing Textures:

Tools required:

- BSA Unpack for Morrowind

<http://www.tesnexus.com/downloads/file.php?id=12189>

- NifTexture

<http://planetelderscrolls.gamespy.com/View.php?view=Utilities.Detail&id=14>

(if you know how to use Nifscope you can use that instead)

- DDS converter 2

<http://www.tesnexus.com/downloads/file.php?id=8698>

- Gimp

<http://www.gimp.org/>

- Normal Map Plugin for Gimp (download button is at right hand side)

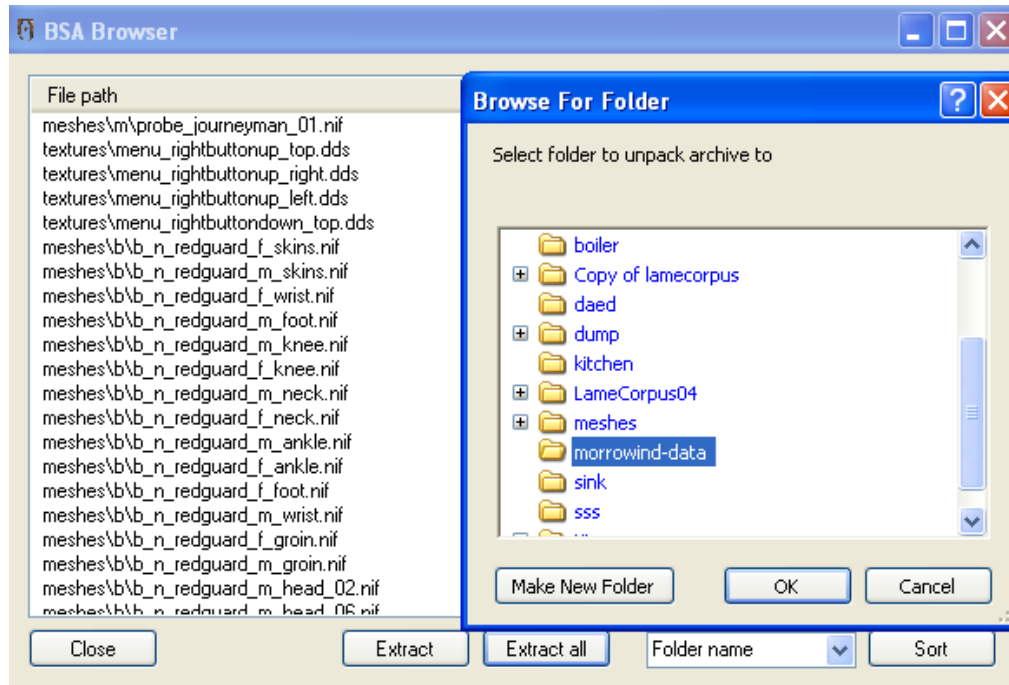
<http://code.google.com/p/gimp-normalmap/>

First of all you need to extract the Morrowind files.

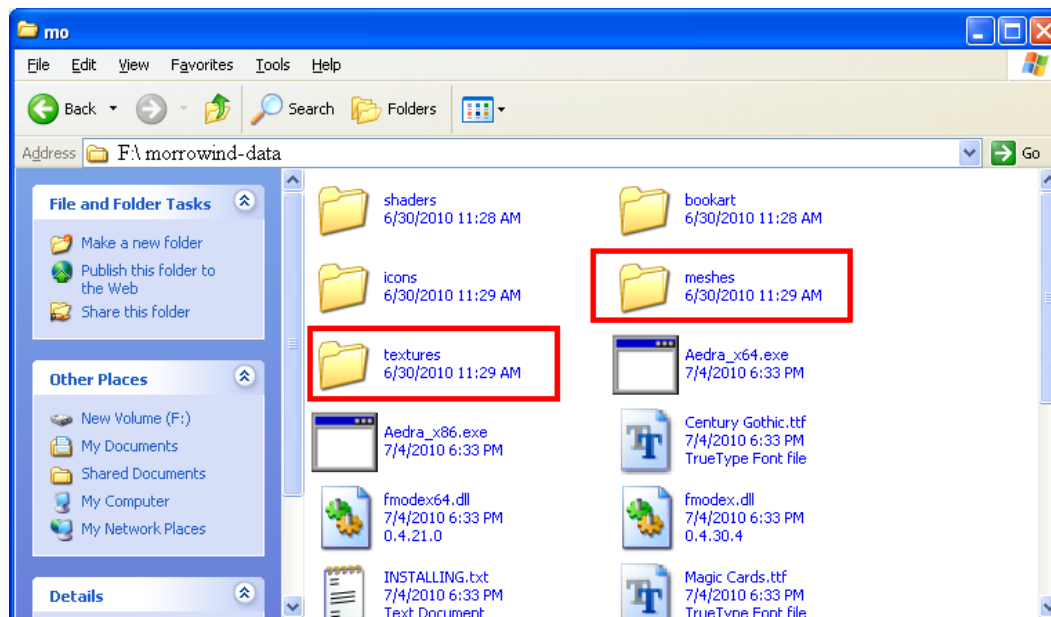
Download BSA Unpack for Morrowind.

<http://www.tesnexus.com/downloads/file.php?id=12189>

Open Morrowind.bsa and select “Extract All” ... have the files copy to a new folder.



I had it extracted to F:\morrowind-data



Open **Meshes\r**

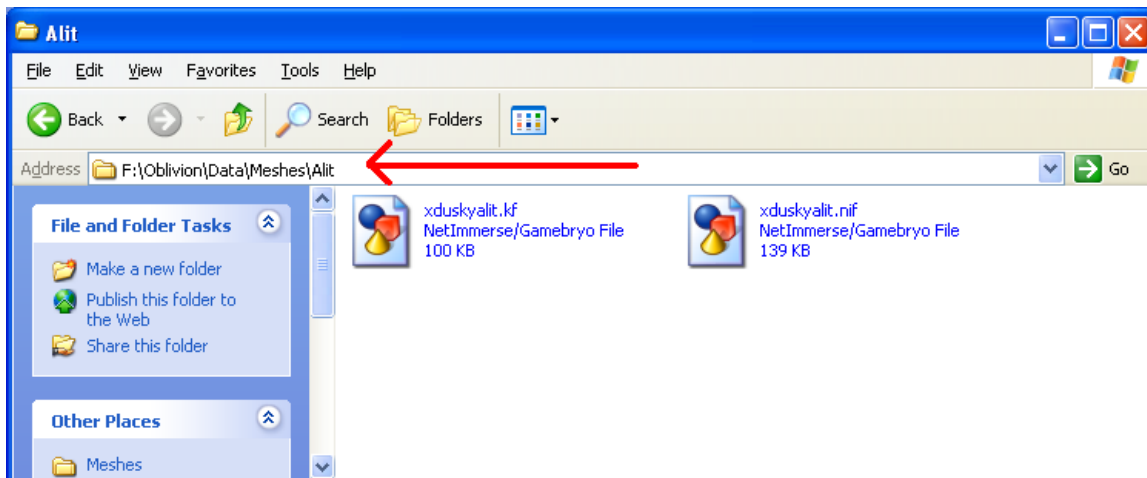
Find and copy the following files:

Duskyalit.nif

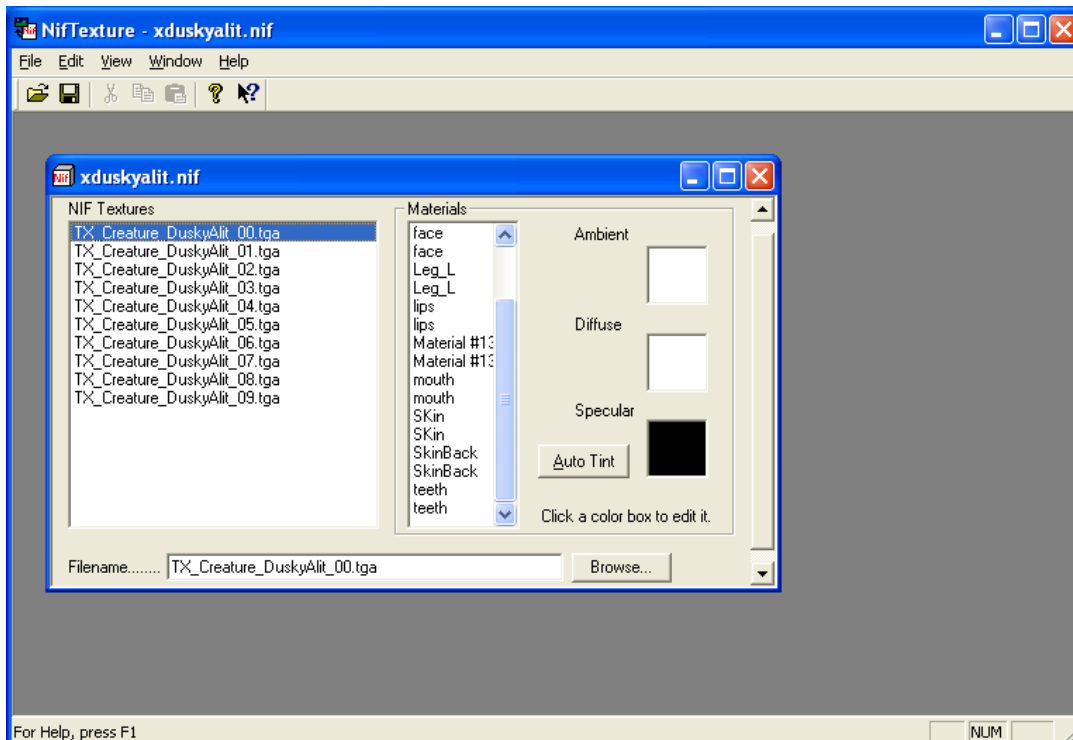
xduskyalit.nif

xduskyalit.kf

Paste them to a new folder in your Oblivion directory ... Oblivion\Data\Meshes\Alit:



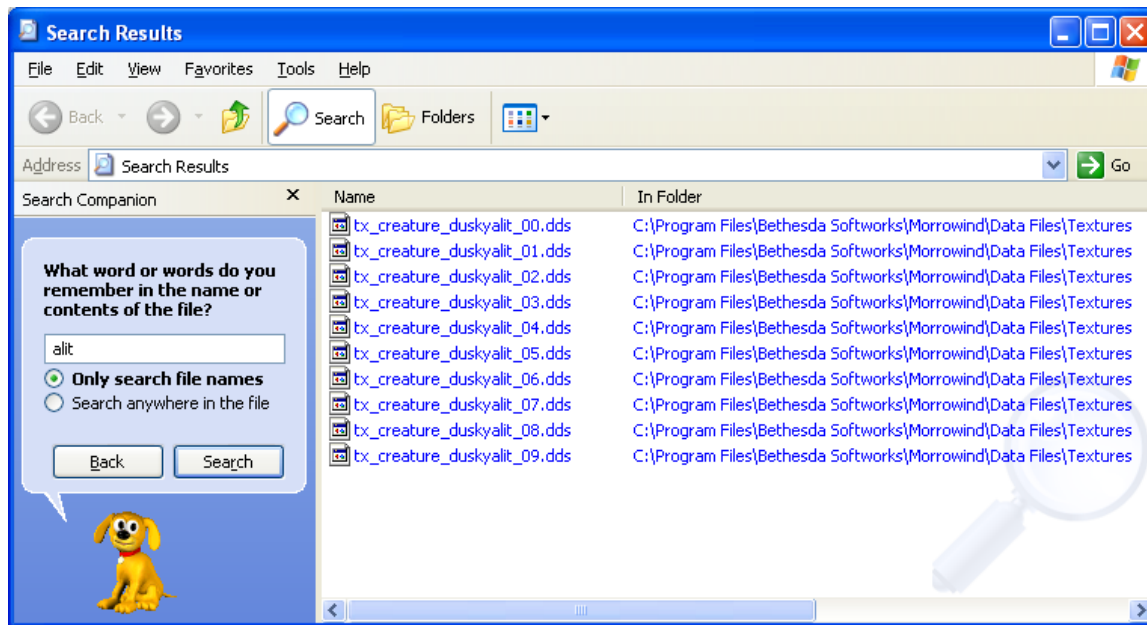
Open NifTexture and in it open the file xduskyalit.nif



Here you have a list of all the textures used by the creature.

You can get these textures from the files you just extracted or use the textures from a Hi-Res texture replacer (like Darknut's creature pack). I would recommend that you use a texture replacer since Morrowind's original textures look terrible in oblivion.

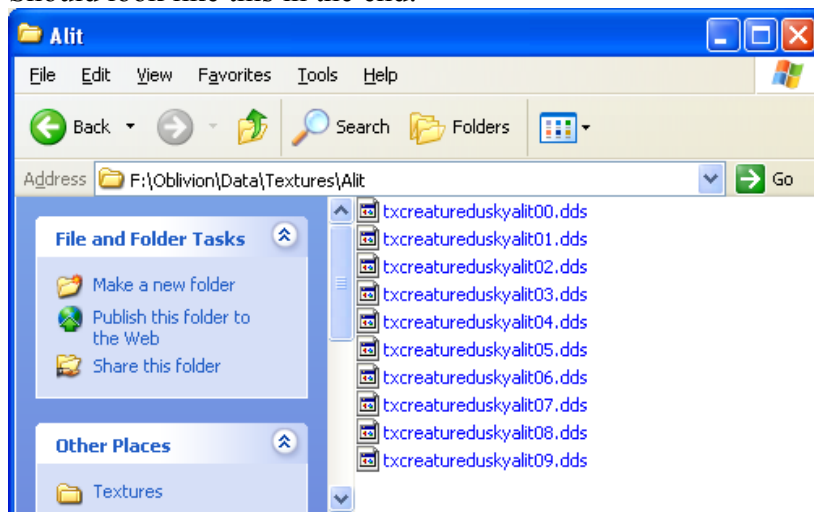
Use the search application in Windows to find the required texture files (note that I have installed Darknut's texture pack to my Morrowind installation and am copying them from there ... also note that these textures end with .dds rather than .tga).



Make the directory Oblivion\Data\Textures\Alit in your Oblivion Installation and copy\paste the above textures into it.

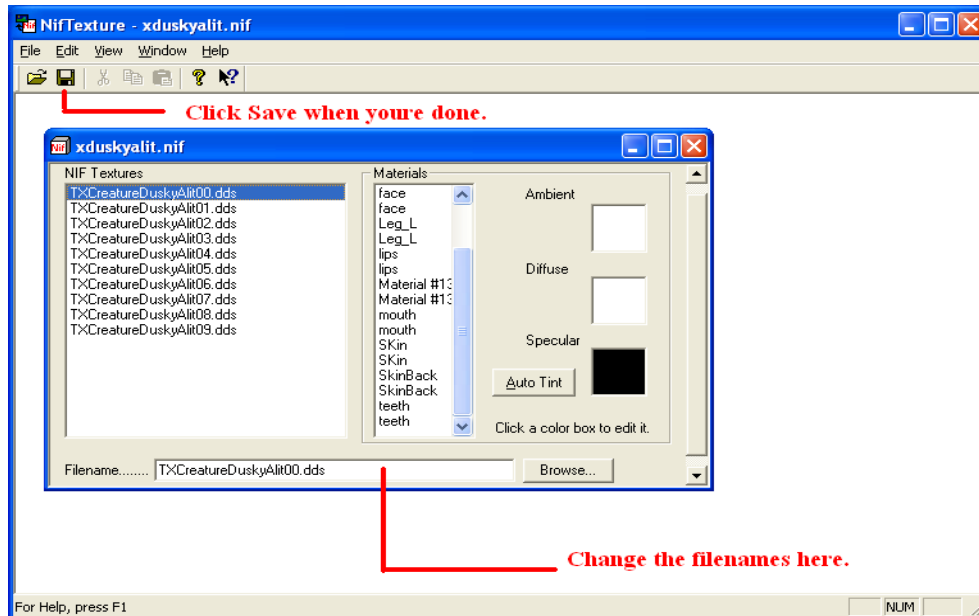
These textures have a lot of underscores (_) in their names, and that can cause problems with oblivion, so rename the copied files to remove all the " _ "

Should look like this in the end:



Next you want to make the same changes to xduskylit.nif by using Niftexture.

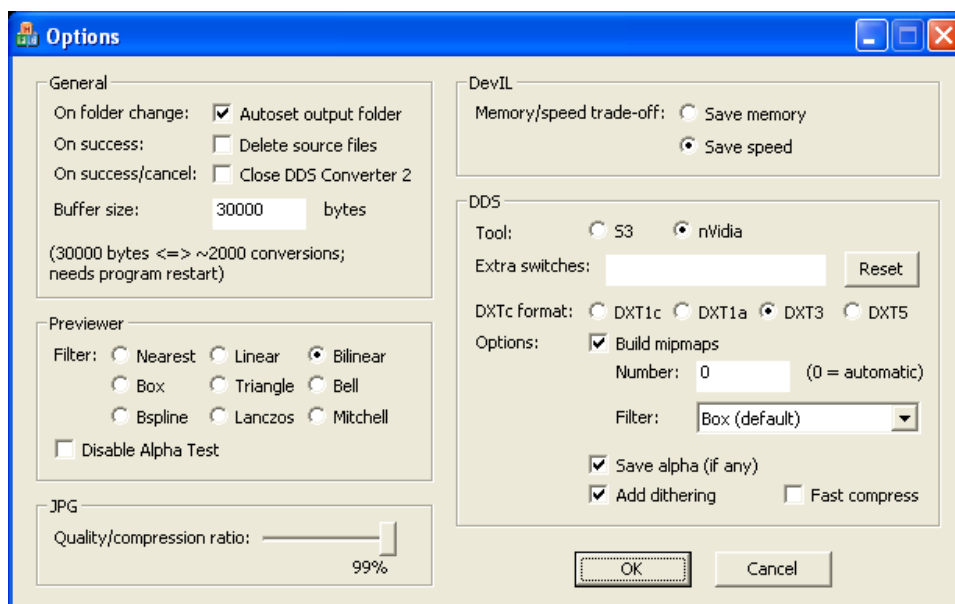
Again Open xduskylit.nif with Nif-texture and rename the files to match the above (i.e remove the underscored (_) and change .tga to .dds). Save the file when you are done.



Finally we are going to make normal maps for these textures. Normal maps make the detail in textures look somewhat 3d ... (referred to as Depth in this tutorial) and also control the Shine in HDR. Also if we don't make a normal map then our creature will be invisible in the game.

Open DDS converter 2

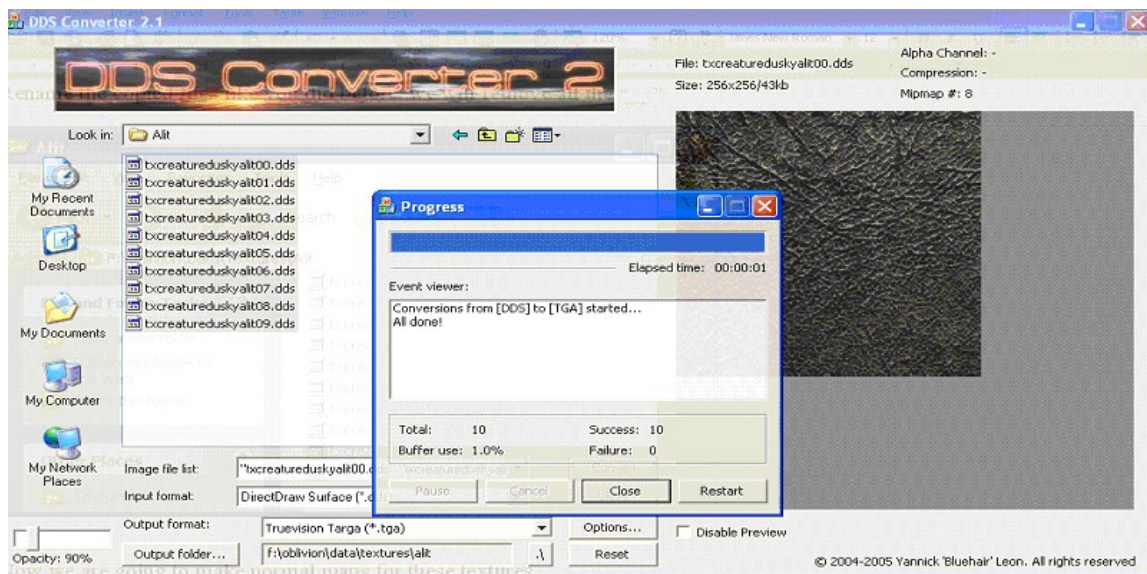
Click on options and change your settings to match the screen below:



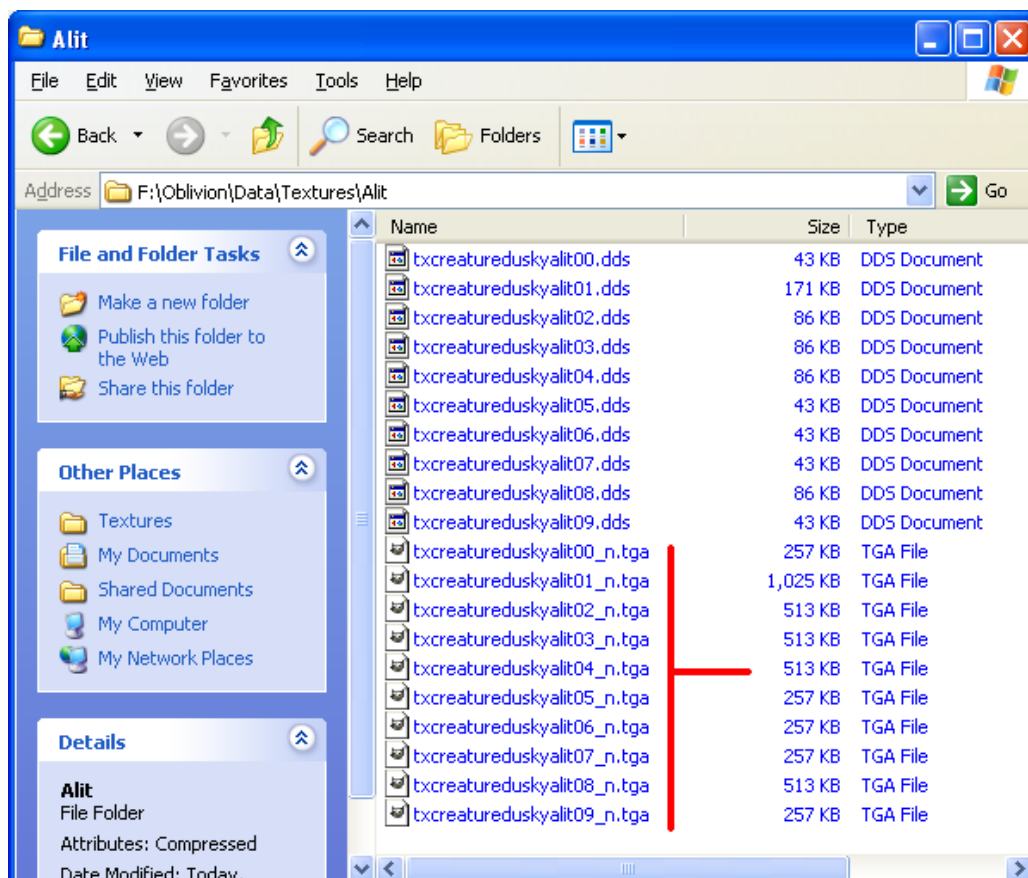
Click OK and then browse into your Oblivion\Data\Textures\Alit folder.

Change input format to .dds and output format to .tga

Select all the texture files (press shift and drag a box around the files)



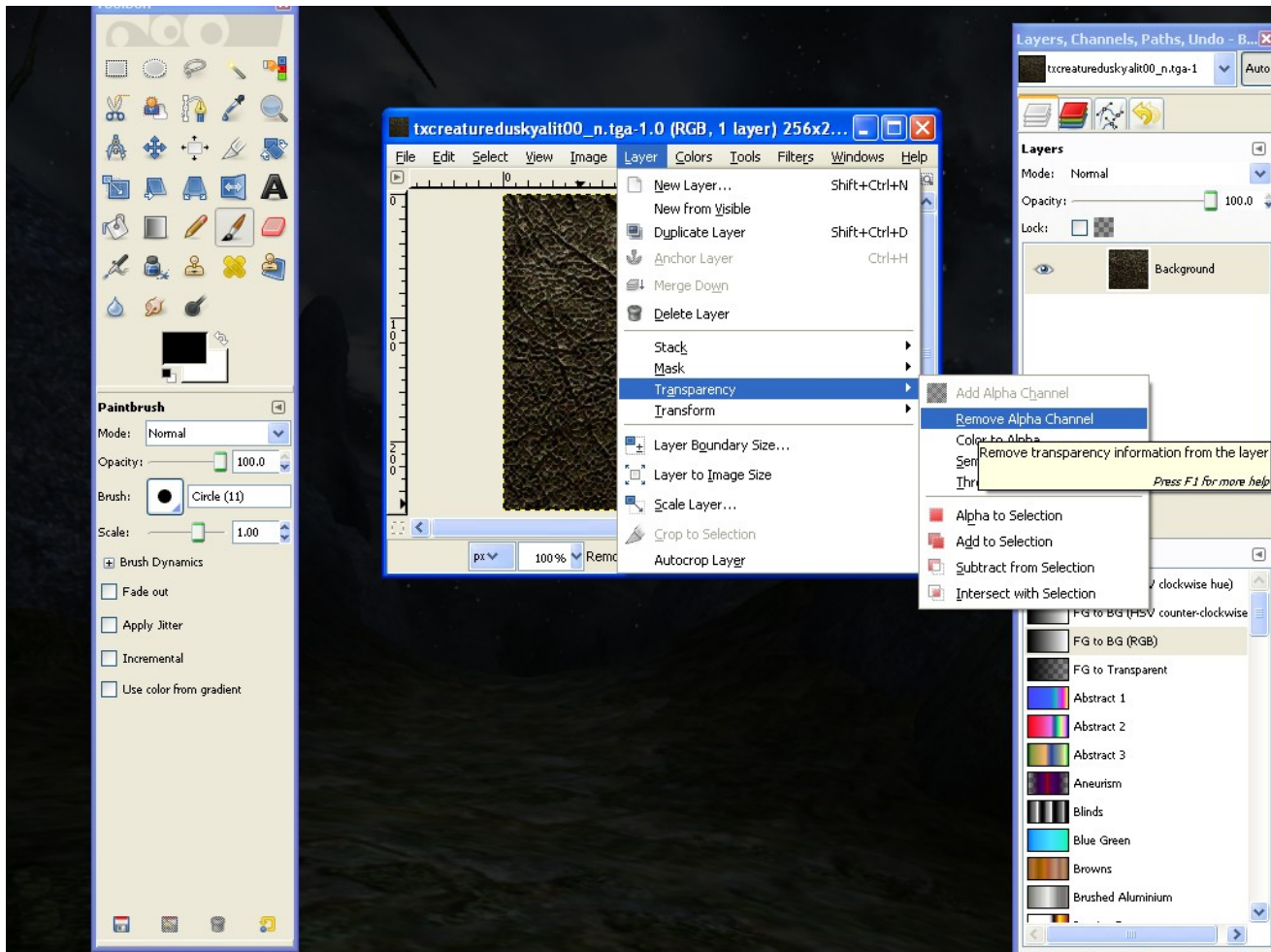
Now rename the new .tga files to add “_n” after the filename but before the .tga extension.



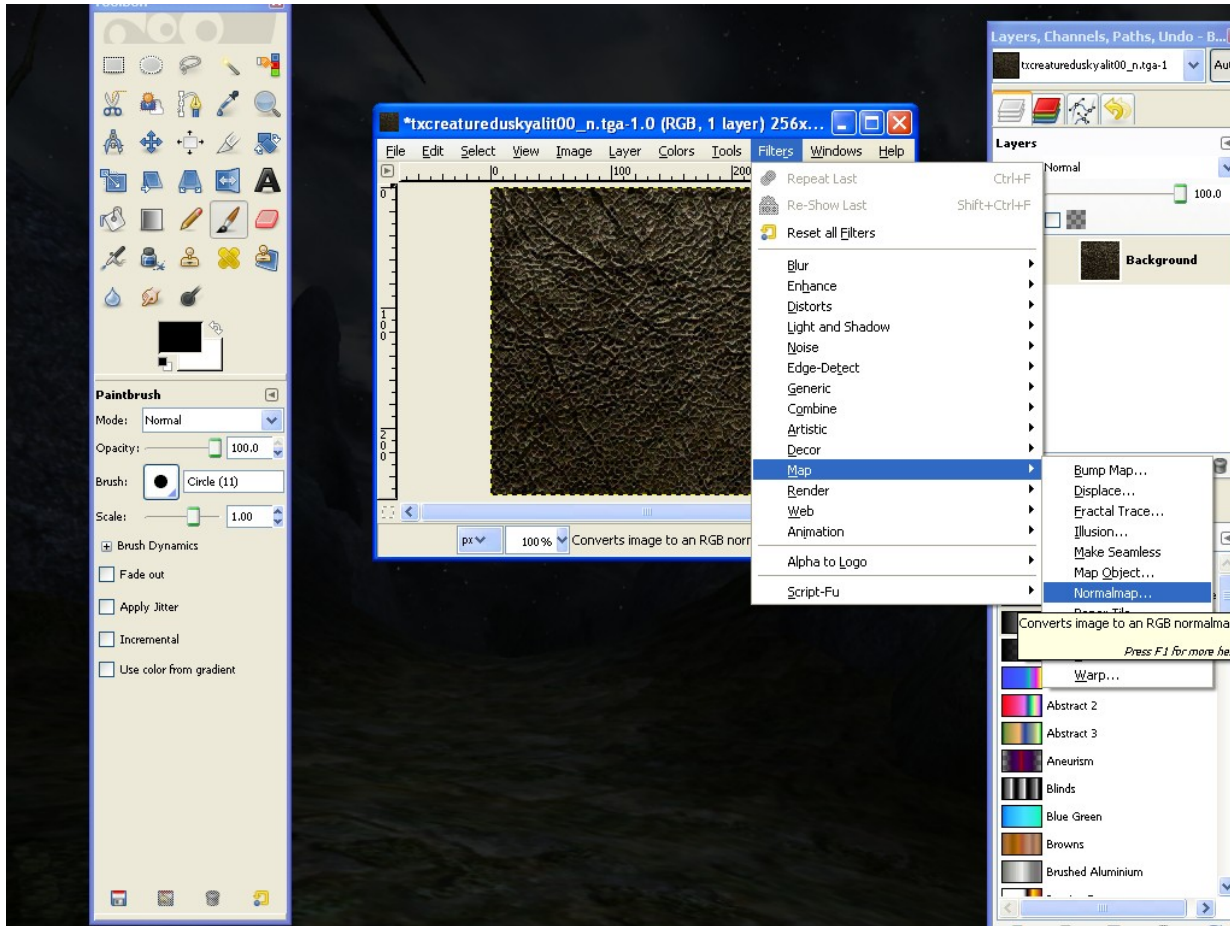
The _n tells the game that these files are Normal Maps.

Now open each of the “_n.tga” file with gimp and do the following steps:

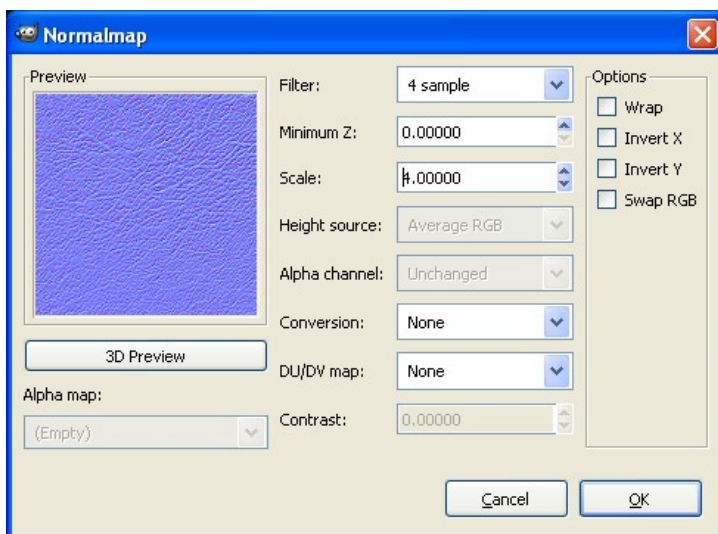
1) Click Layer-> Transparency->Remove Alpha Channel



2) Click Filters->Map->Normal Map (this option will not appear if you have not installed the normal map plugin).

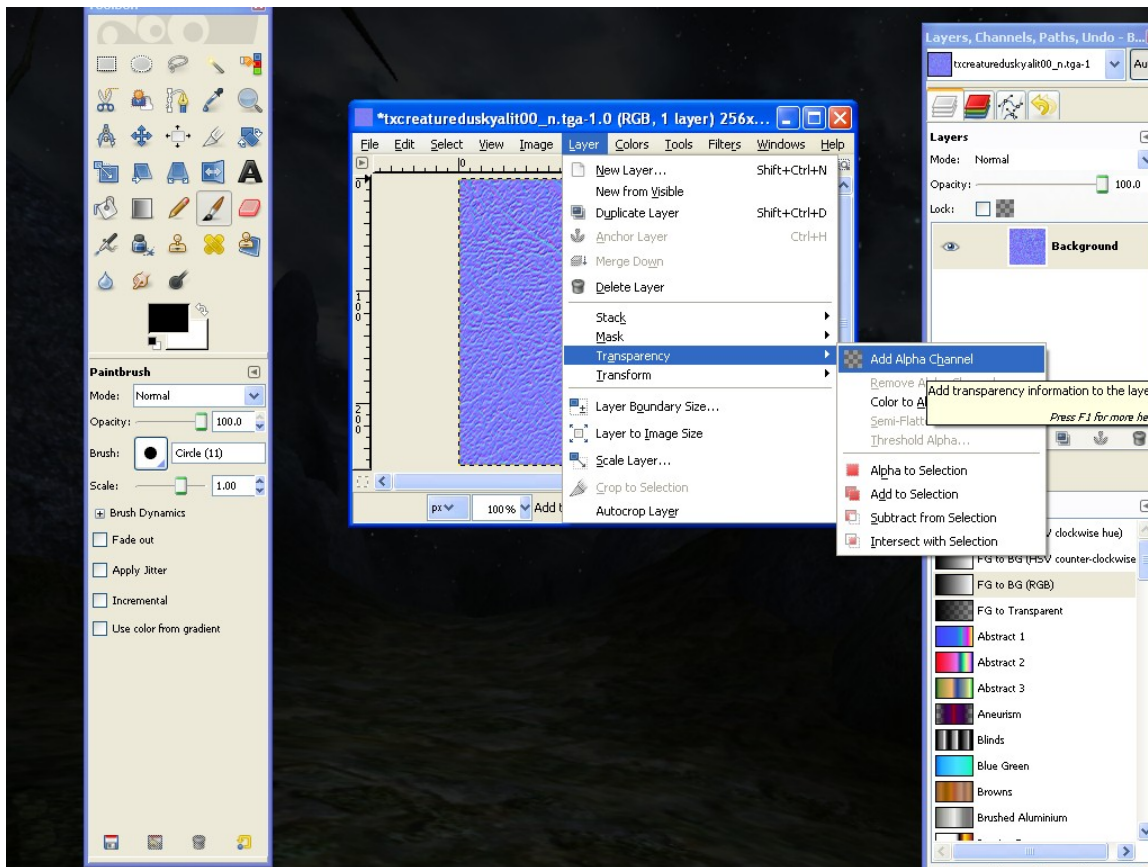


In the Normap Map window, you want to keep it to default options, but perhaps increase the Scale value to get more detail in the normal map. Click Ok.



This makes the “Depth” part of the Normal Map, but we still need to add the “Shine” part. Shine in the normal map is controlled by the opacity of the image, the more transparent it is the less shiny. The Alit is not supposed to be much shiny so we will make this normal map very transparent ... so much that you cant even see it in gimp :p

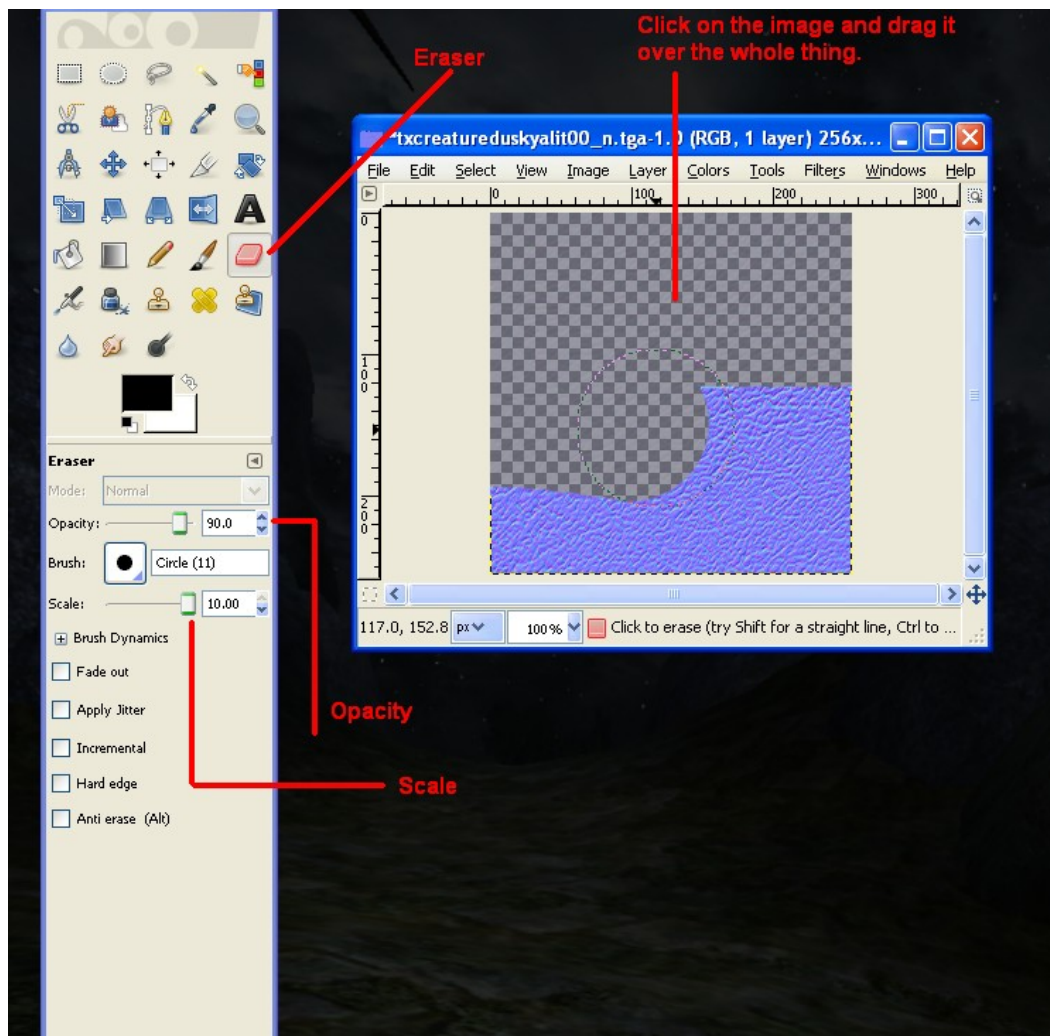
Click Layer->Transparency->Add Alpha Channel



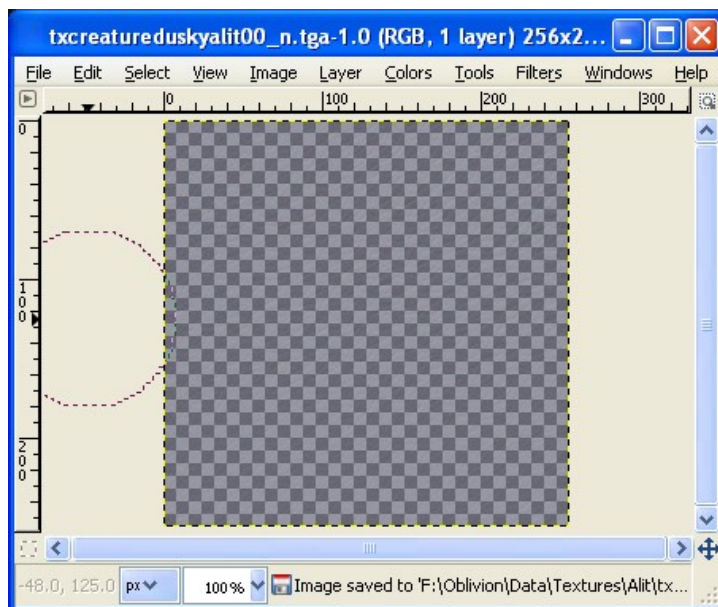
Next select the eraser tool, set its scale to 10 and its opacity to 90.0, click on the image and drag it to erase the whole image.

Notes:

- make sure that you click only once and keep the button pressed until you have covered it all ... if you let go and click again then the “Depth” data in the image will be lost.
- Any Opacity above 95 will cause some “Depth” data to be lost, so don’t do that.
- Your image should look like the screen below (grey boxes) ... if you get a white image then you did not add the alpha channel.

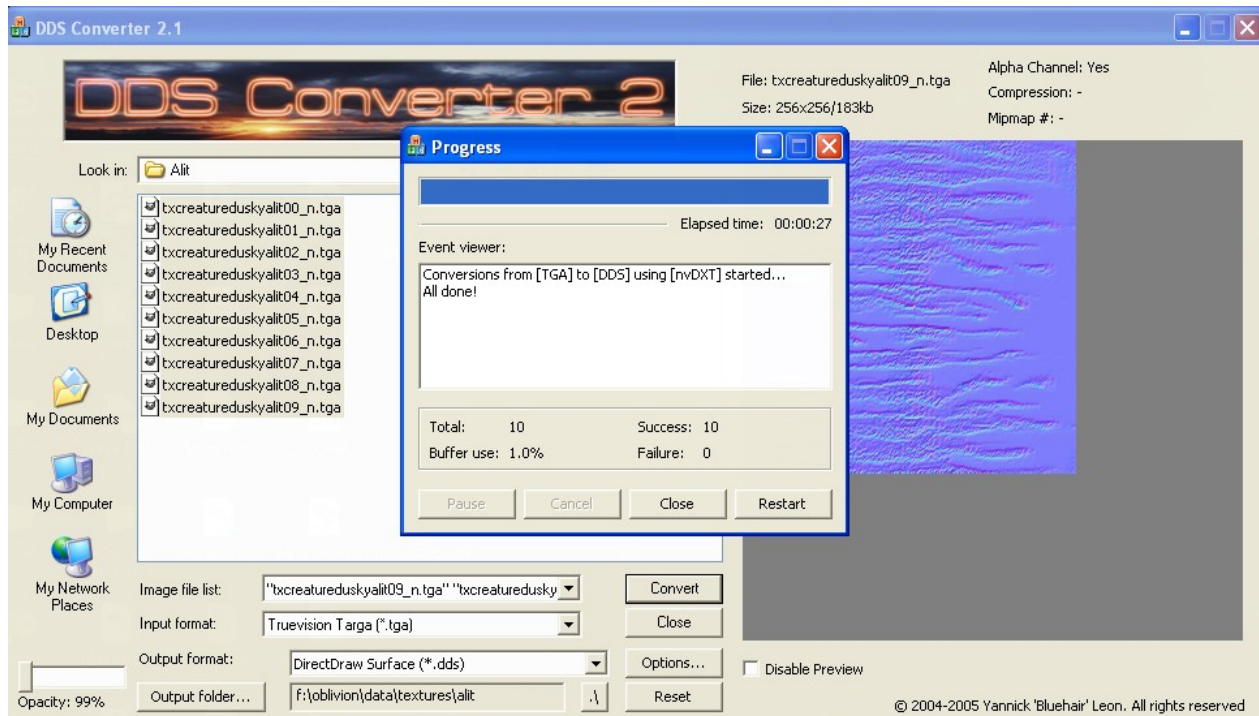


When done save the file.

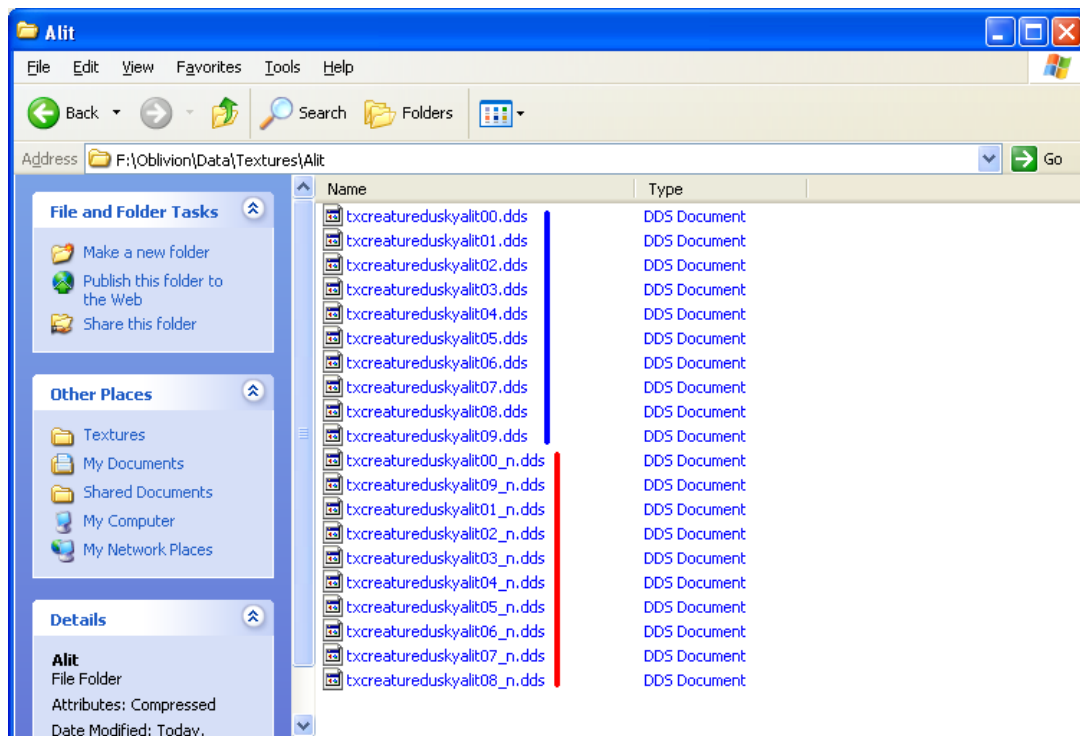


Repeat these steps with all the _n.tga files.

Then convert them back to .dds using dds converter.



Finally delete the .tga files and your texture folder is done:

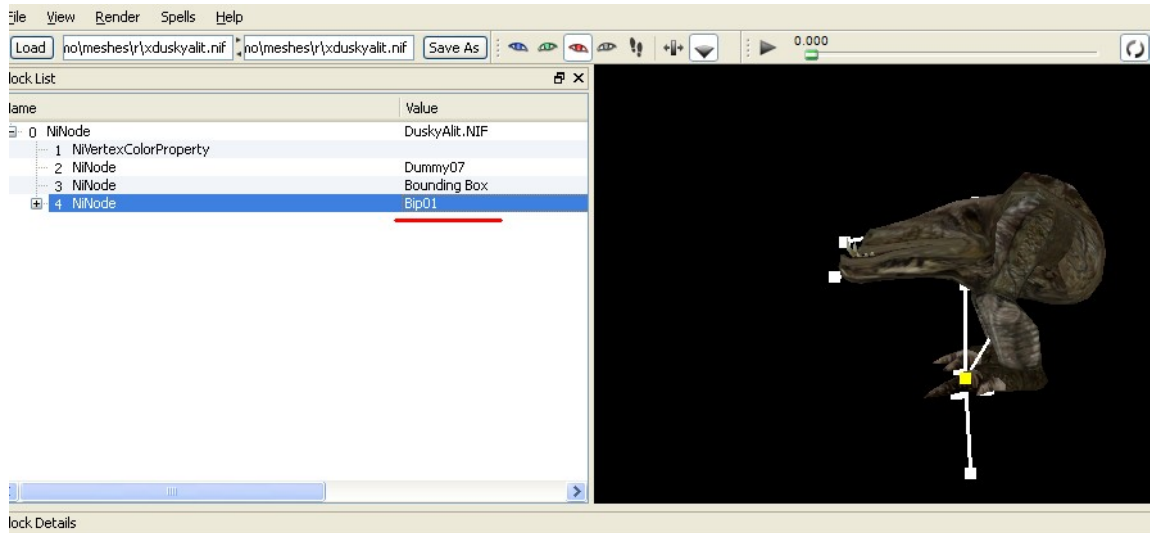


Preparing the Mesh

- You need 3ds max and the Niftools Plugin for this.

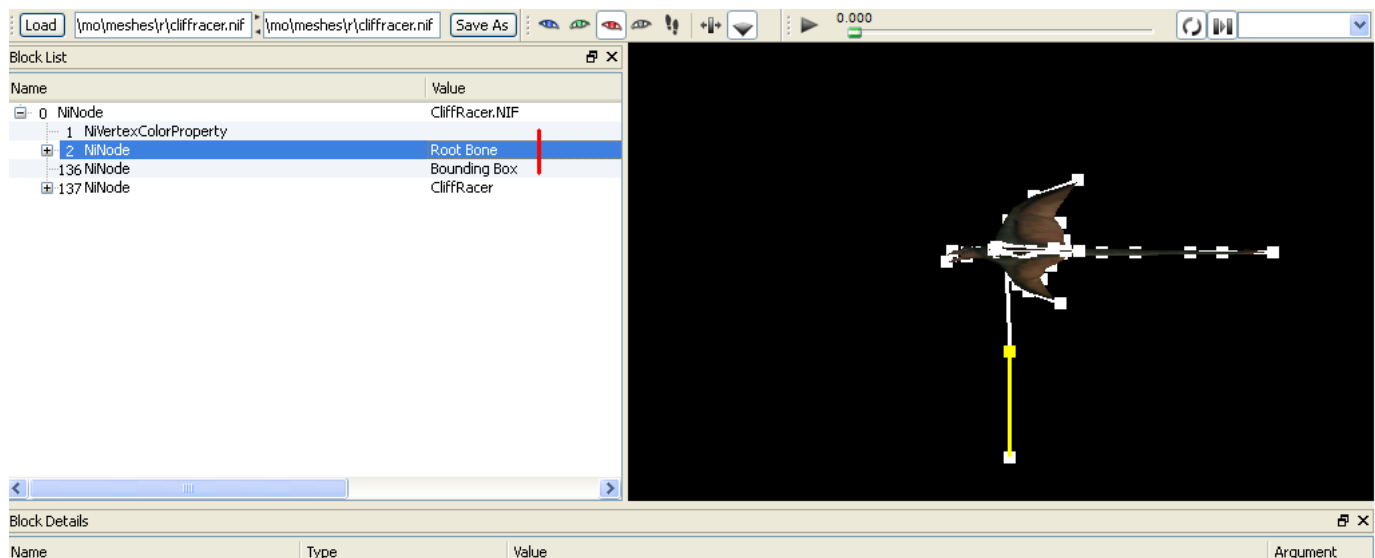
First of all open xduskyalit.nif in nifscope.

Look at the bone structure in the left panel:



If the parent node is named Bip01 (which it is) then you do not need to do anything and should proceed to the 3dsmax part.

In some creatures however it will be named as Root Bone ... example in the cliff racer:



IF this is the case then you want to change the name to Bip01 in nifscope. Just press click on the word "Root Bone" for a while and the text should become editable ... change it to Bip01 (exact name).

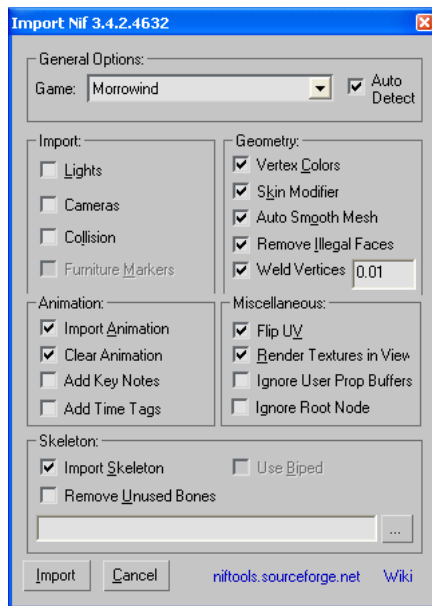
Open 3ds max.

Click File->Import

Set file type to Nif and then browse to Oblivion\Data\Meshes\Alit

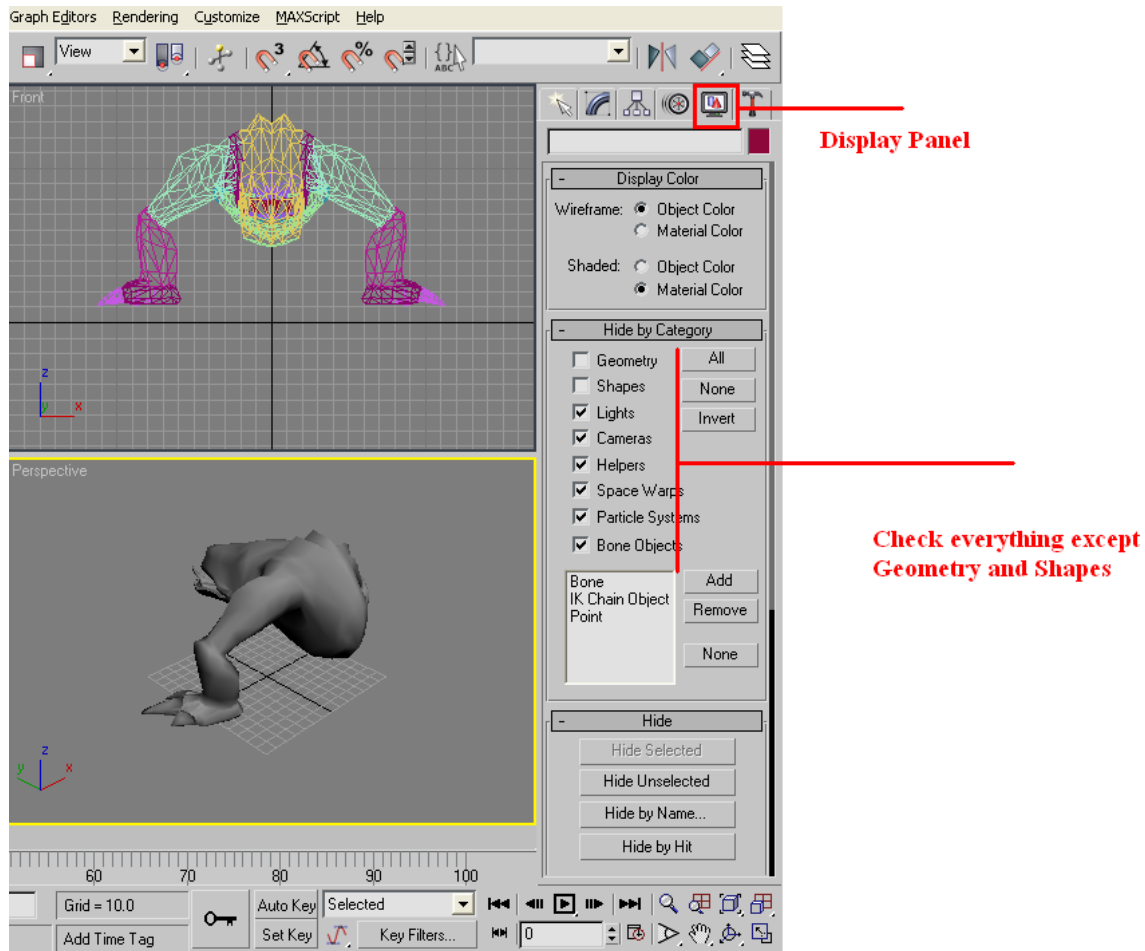
Import duskyalit.nif.

On the next window make sure that your settings match this screen:



Click Import.

Next in the display panel, hide everything except Geometry and shapes:

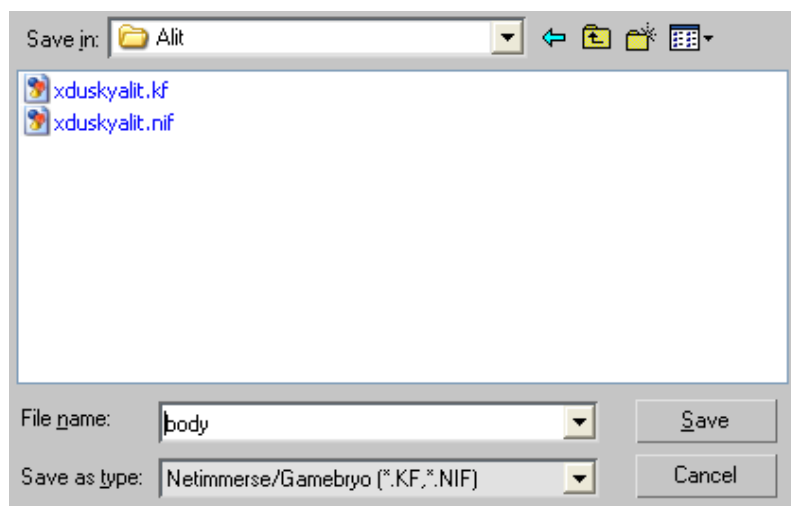


Then Click File->Export

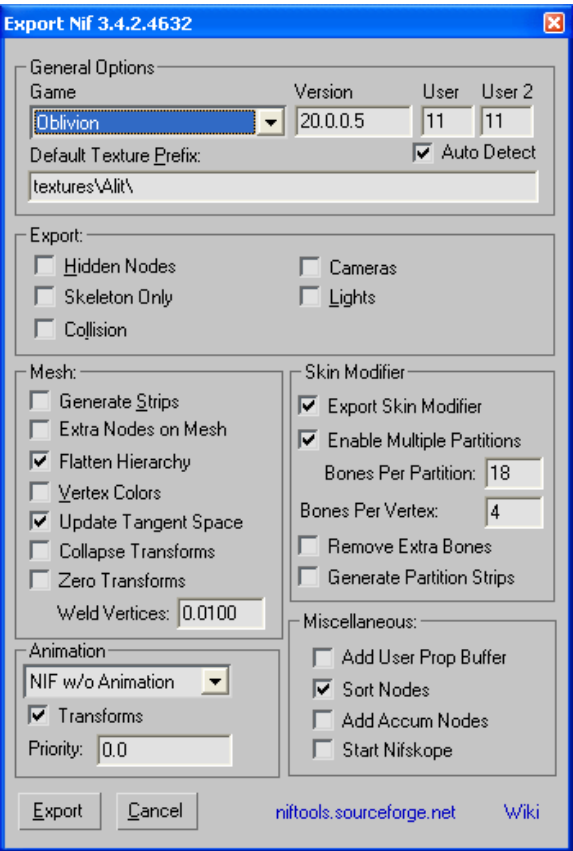
Browse to Oblivion\Data\Meshes\Alit

Choose nif in the file format.

And save as “body”

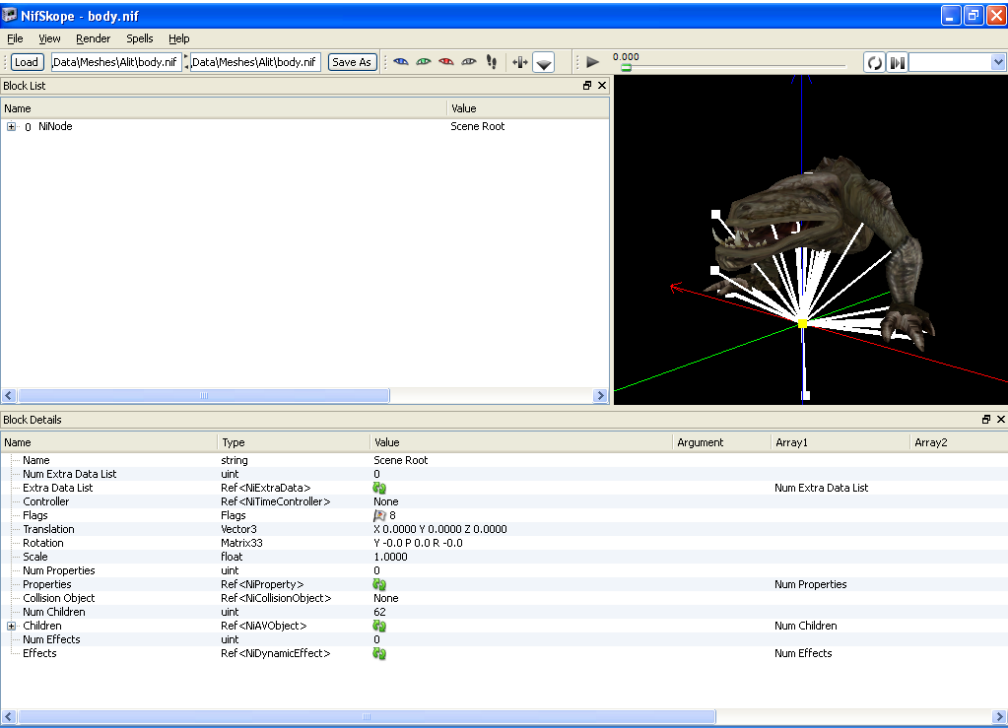


Make sure that you use the following **exact** export settings on the next screen:



Click Export and you should be done, (do NOT close 3ds max).

Open body.nif in nifscope and you should be able to see the Alit, complete with textures.

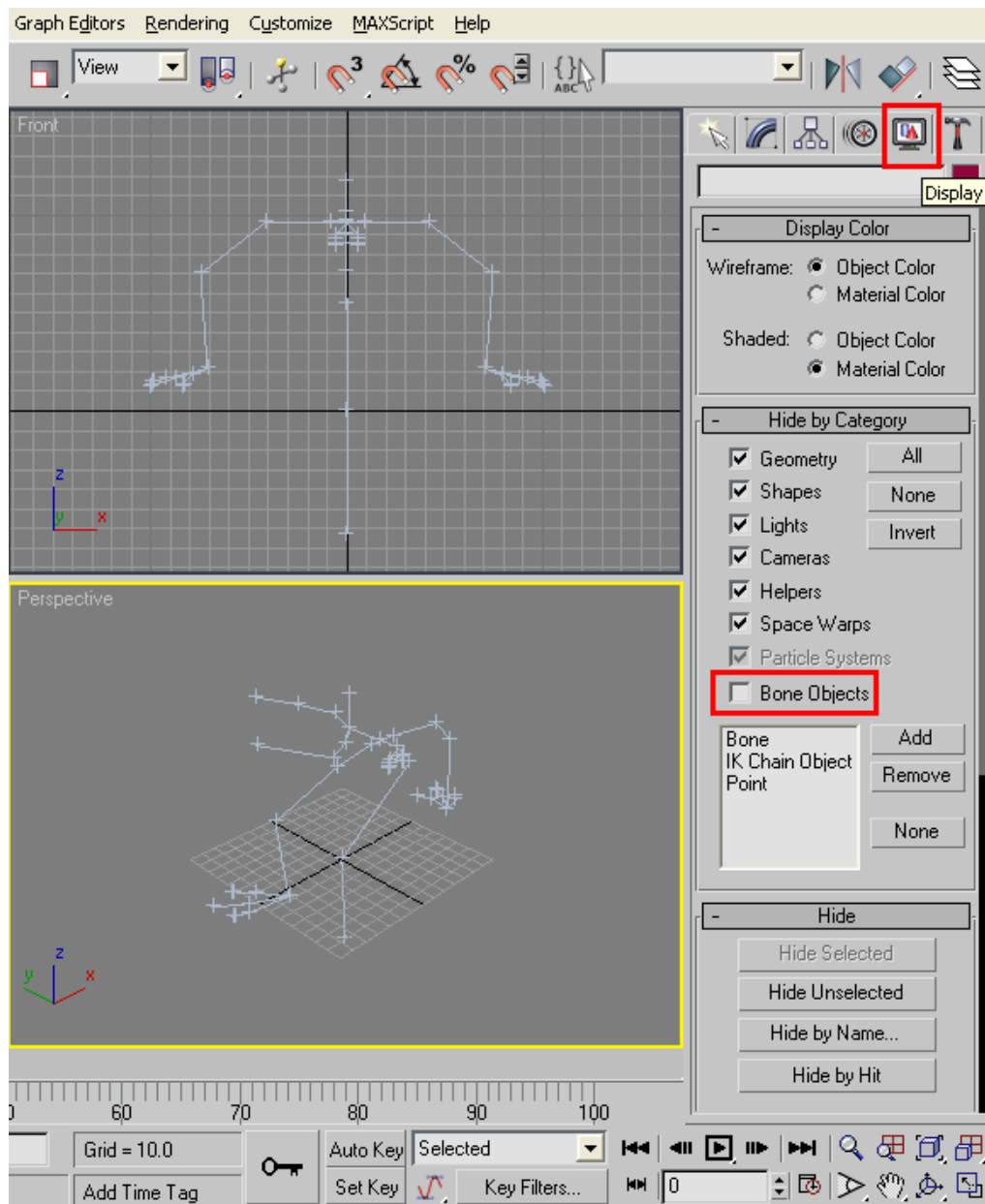


Preparing the Skeleton

- You need 3ds max and Nif tools Plugin for this

3dsmax should still be open with your model loaded in.

In the display Panel, hide everything except for Bone Objects.

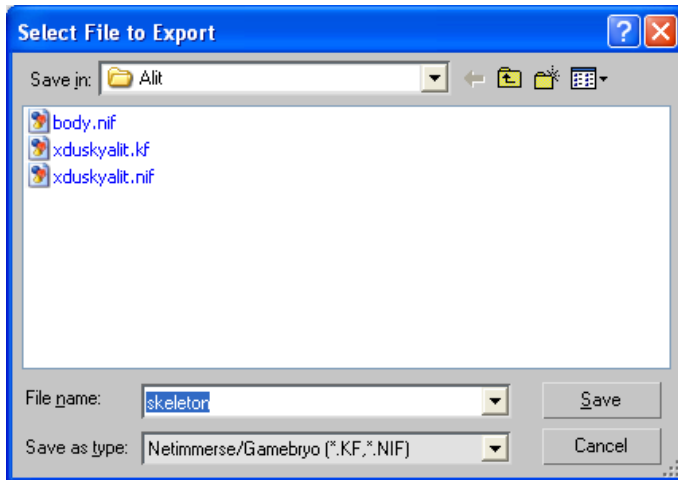


Click File->Export

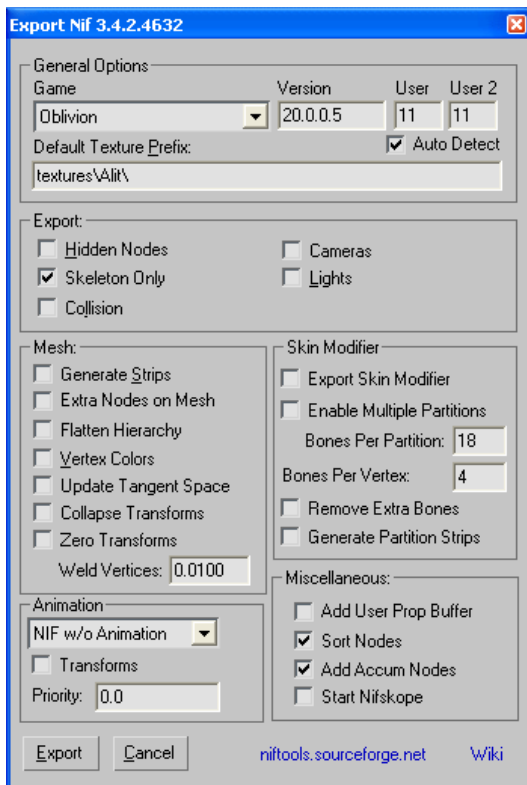
Browse to Oblivion\Data\Alit

Select nif as the file format.

Save your file as “skeleton”

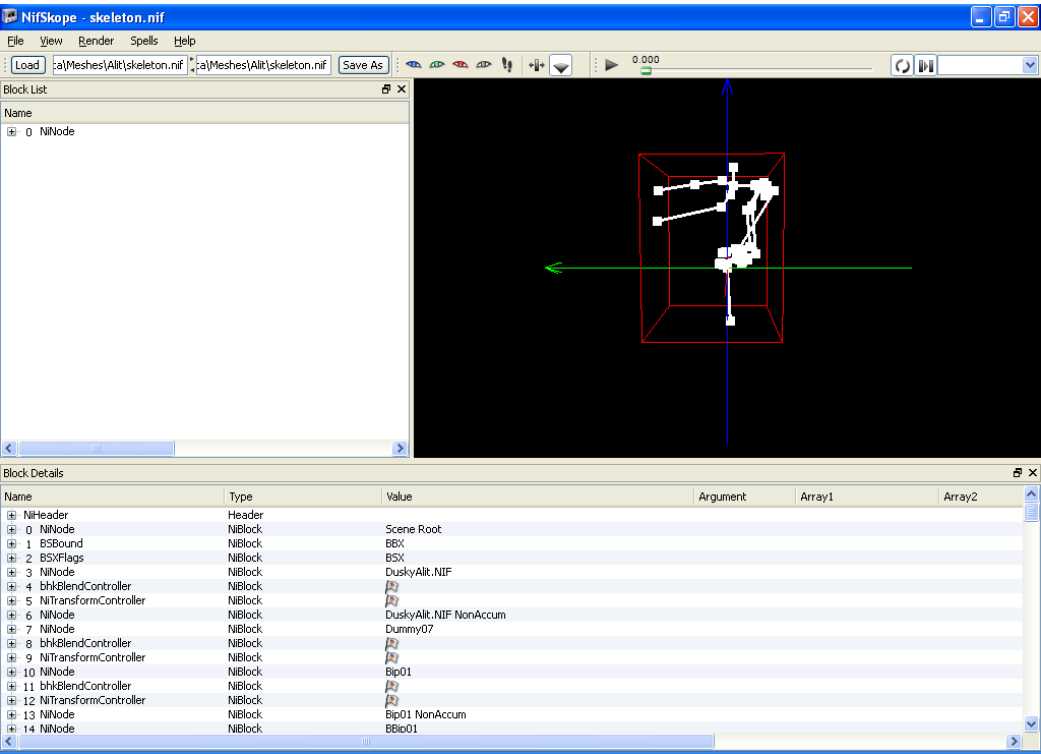


Export with the following **exact** settings:



Click export and your skeleton should be ready.

Here is how the skeleton should look like in nifscope:



Preparing Animations:

Tools required:

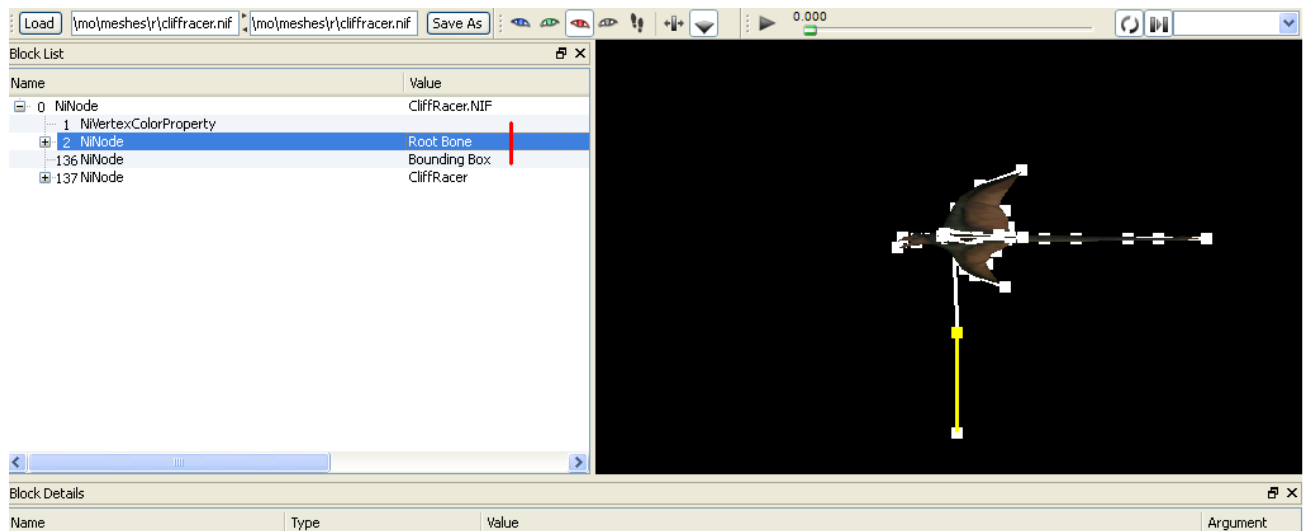
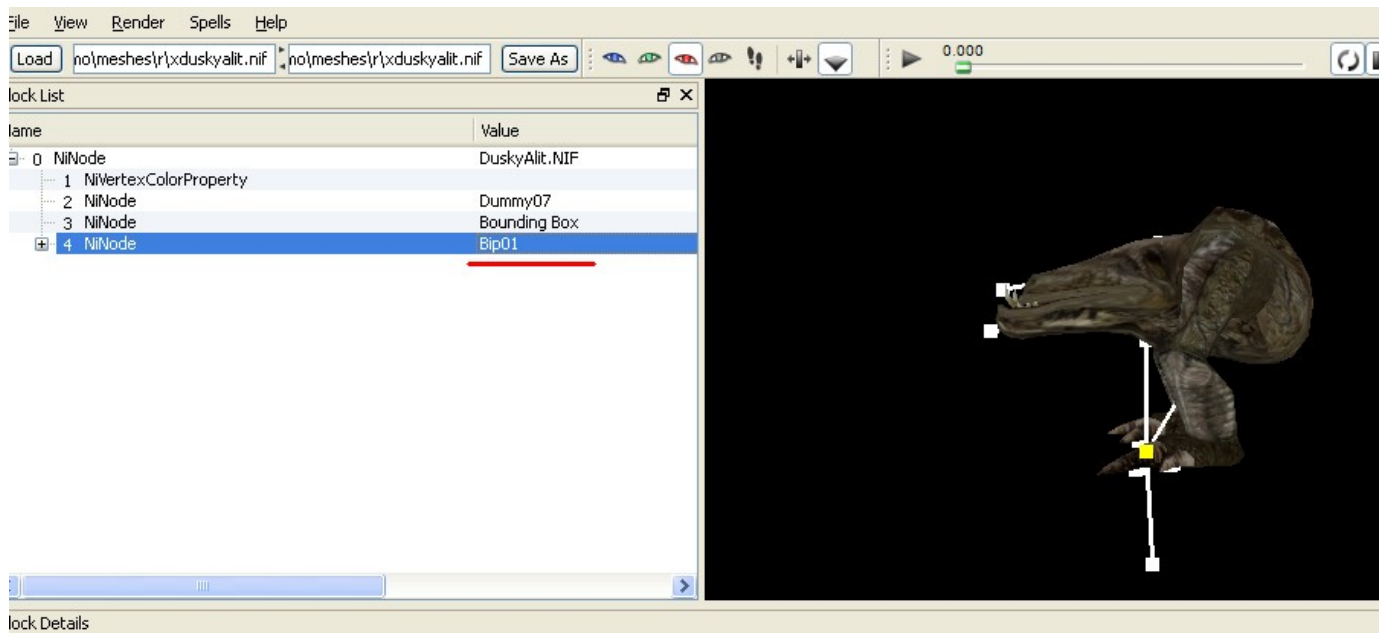
- 3ds max 6,7 or 8
- Niftools for max
- Civ 4 tools <http://forums.civfanatics.com/showthread.php?t=159481>
- Nifscope

Alright this is the animation conversion part of the tutorial.

For this part of the tutorial we will need the third morrowind file **duskyalit.nif**

You can also use **xduskyalit.kf** (open it in max after **xduskyalit.nif**) but I generally prefer to use **duskyalit.nif**

Anyways first open duskyalit.nif in nifscope and make sure that the root bone is Bip01.



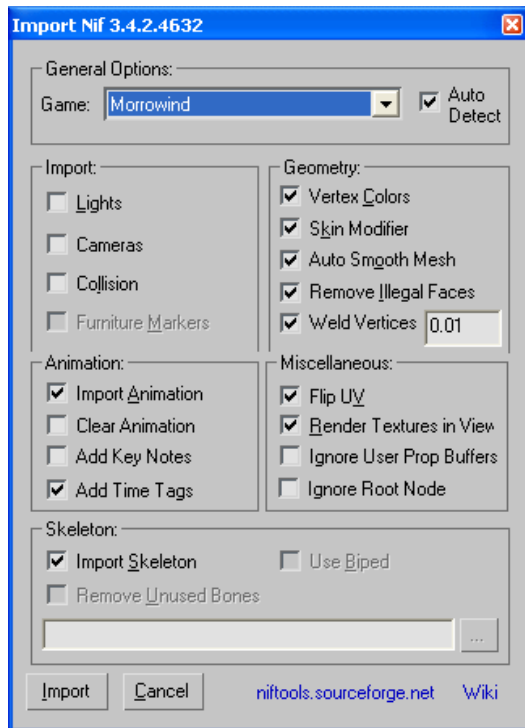
In the case of the alit this is true ... but if it was not (as in the cliff racer) then you would need to rename it to Bip01 and save the nif. (To rename it click on the word **Root Bone** until it becomes editable text ... then delete and retype).

There is no need to worry about the texture paths with this file since we will not use the mesh but only the animations.

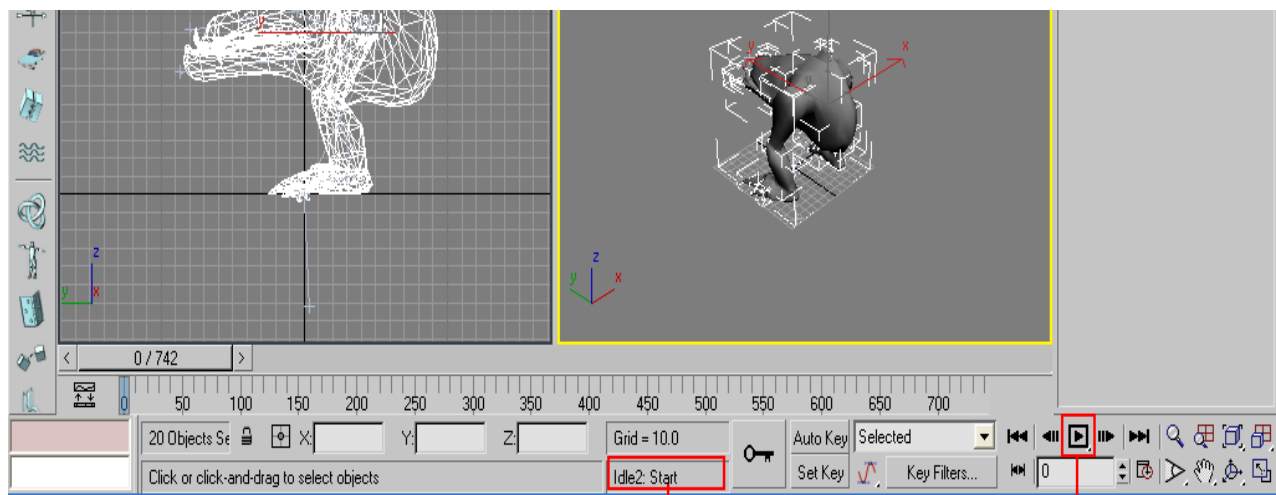
Anyways next open 3ds max (if it is already open then clear the scene).

Click File->Import, change filetype to nif and browse to the directory where duskyalit.nif is located.

Import it with the following exact settings. Especially make sure that “Import Animation” and “Add Time Tags” is checked and that “Clear Animation” and “Add Key Notes” is unchecked.



If you now click the Play button then you should see the alit performing its animations (though it would be stuck in its place ... don't worry about that).



Time Tags

Play

Anyways right click the Time Tag button and you should see this list:

▲
Add Tag
Edit Tag

0 Idle2: Start
80 SoundGen: Moan
200 Idle3: Start□□Idle3: Loop Start□□Idle2: Stop
258 SoundGen: Moan
386 Idle4: Start□□Idle4: Loop Start□□Idle3: Loop Stop□□Idle3: Stop
391 SoundGen: Roar
412 WalkForward: Start□□Idle4: Loop Stop□□Idle4: Stop
420 WalkForward: Loop Start□□
428 SoundGen: right
442 SoundGen: left
454 WalkForward: Loop Stop□□
460 SoundGen: right□□WalkForward: Stop
462 Attack1: Start
466 SoundGen: Roar
468 Attack1: Hit ←
474 Sound: SwishL
478 Attack2: Start□□Attack1: Stop
482 SoundGen: Roar
486 SoundGen: left
487 Attack2: Hit ←
490 Sound: SwishL
494 Attack3: Start□□Attack2: Stop□□SoundGen: left
498 SoundGen: Roar
504 Attack3: Hit□□Sound: SwishL
520 Hit1: Start□□Attack3: Stop
525 SoundGen: Scream
530 Hit2: Start□□Hit1: Stop
534 SoundGen: Scream
538 Death1: Start□□Hit2: Stop□□Knockout: Start
542 DeathKnockdown: Start□□SoundGen: Scream
551 SoundGen: Land□□DeathKnockOut: Start
558 Death1: Stop□□DeathKnockdown: Stop□□Knockout: Loop Start□□DeathKnockout: Stop
648 SoundGen: right□□TurnRight: Loop Stop□□TurnRight: Stop□□TurnLeft: Sta
662 SoundGen: left
678 SoundGen: right□□TurnLeft: Loop Stop□□TurnLeft: Stop
680 RunForward: Start
684 RunForward: Loop Start
693 SoundGen: left
706 SoundGen: right
710 RunForward: Loop Stop□□SoundGen: right
716 RunForward: Stop□□SoundGen: left
718 Idle: Start
723 SoundGen: Roar
742 Idle: Stop

Equip
Unequip

▼

Some of the information here is relevant for your purpose and some is not.

I have highlighted the information that I will use.

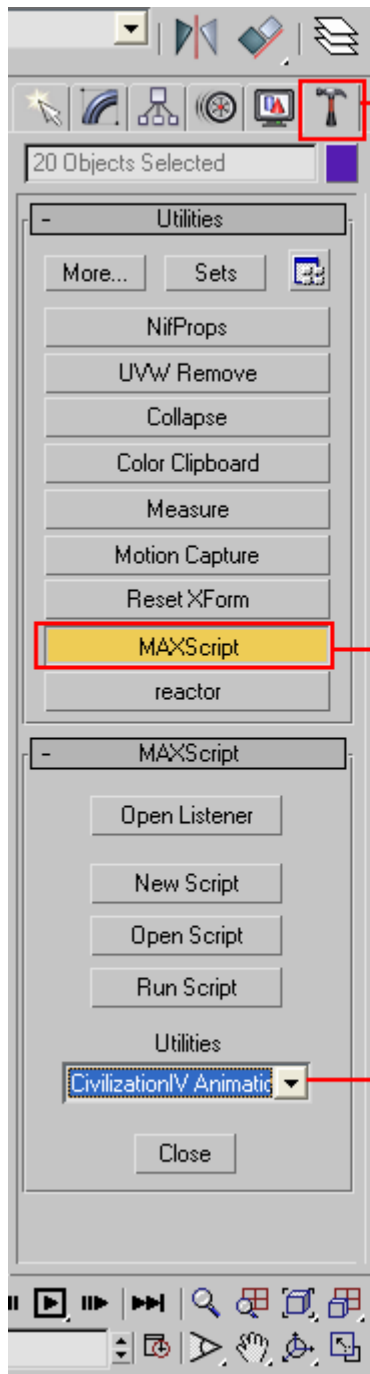
Generally we want the start and end times for each animation. As well as the Hit time for Attacks (not the Hit1 that is underlined in pink ... that's for stagger).

We do not need to know the LoopStart or LoopEnd times ... nor the Sound times.

Oblivion also requires two additional animations that were not present in Morrowind: Equip and Unequip. You can adapt any of the other animations for this (you can even re-use any of the other ones if you like); however I will use Idle1.

If you want then you can also use Attack3 as oblivion's power attack. And you can use Sound tags as Oblivion's Enum (does the same thing). Also if you want then you can include the whole idle animation (idle4 as well as idle1) ... or you can split the idle anims and make special-idles for oblivion.

^ That's all possible but I will not explain it, experiment on it yourself if you want.



Utilities Panel

So lets get to work.

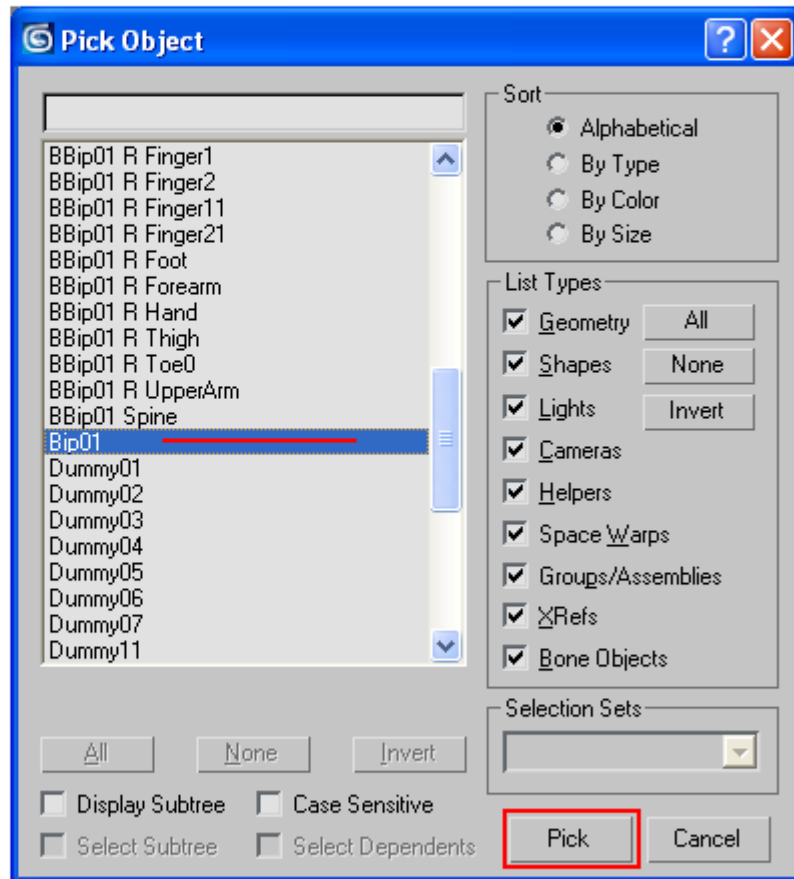
Open the Utilities Panel in 3ds max and then Click MAXScript.

MaxScript

Civ4 tools

Here you should see the name Civ4 Animation tool. Open the List and reselect it to open it.

This will open a new panel below it:



Under Actors click **Add** so it becomes orange. Then press **h** on your keyboard and a new window will open as shown above.

Scroll down and select Bip01 and click Pick.

Now scroll down in the right panel and you should see something like this:



Here is where we start putting in the data we got from the Time Tag.

First we will do idle:

You need to change the Active Sequence Name to “idle”

Select Loop Sequence.

Enter the Start and End Frames you got from the Time Tags.

Expand this.

Select Accumulate Translations and make sure X and Y axis are checked.

Now you need to export the animation.

Click File-> Export. Goto your Oblivion directory and change filetype to nif.

Save the file as idle and use the following exact settings for export:

Export Nif 3.4.2.4632

General Options:

Game: Oblivion | Version: 20.0.0.5 | User: 11 | User 2: 11

Default Texture Prefix: textures\aliti | ☒ Auto Detect

Export:

☐ Hidden Nodes | ☐ Cameras
☒ Skeleton Only | ☐ Lights
☐ Collision

Mesh:

☐ Generate Strips
☐ Extra Nodes on Mesh
☐ Flatten Hierarchy
☐ Vertex Colors
☐ Update Tangent Space
☐ Collapse Transforms
☐ Zero Transforms
Weld Vertices: 0.0100

Skin Modifier:

☒ Export Skin Modifier
☒ Enable Multiple Partitions
Bones Per Partition: 18
Bones Per Vertex: 4
☐ Remove Extra Bones
☐ Generate Partition Strips

Animation:

Single KF w/o NIF | ☒ Transforms
Priority: 20

Miscellaneous:

☐ Add User Prop Buffer
☒ Sort Nodes
☒ Add Accum Nodes
☐ Start Nifscope

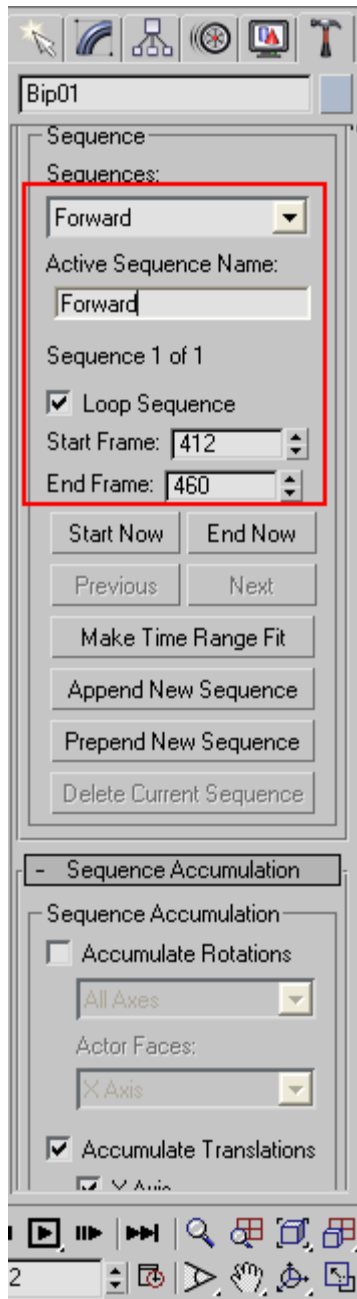
Export | Cancel | niftools.sourceforge.net | [Wiki](#)

Pay special attention to selecting: **Single KF w/o nif** and the **Priority number**.

We will use these same settings for every animation but we will change the Priority.

Click Export and your oblivion compatible kf should be made and you will be back in max. You can check your animation in nifscope if you want.

Next we will do Walking Animation:



Change the Active Sequence name to Forward.

Change the Start and End frames to what you got from the Time Tags.
(remember that the End Frame must always be bigger than Start Frame or
you will get an error in max. So here we will change the End frame first and
then the Start frame)

The rest of the settings should remain as they are.

Export again.

File->Export.

Save the file as WalkForward and choose the following settings:

Export Nif 3.4.2.4632

General Options

Game: Oblivion Version: 20.0.0.5 User: 11 User 2: 11

Default Texture Prefix: textures\Alit Auto Detect: ☒

Export:

☐ Hidden Nodes ☐ Cameras

☒ Skeleton Only ☐ Lights

☐ Collision

Mesh:

☐ Generate Strips

☐ Extra Nodes on Mesh

☐ Flatten Hierarchy

☐ Vertex Colors

☐ Update Tangent Space

☐ Collapse Transforms

☐ Zero Transforms

Weld Vertices: 0.0100

Skin Modifier:

☒ Export Skin Modifier

☒ Enable Multiple Partitions

Bones Per Partition: 18

Bones Per Vertex: 4

☐ Remove Extra Bones

☐ Generate Partition Strips

Animation:

Single KF w/o NIF

☒ Transforms

Priority: 30.0

Miscellaneous:

☐ Add User Prop Buffer

☒ Sort Nodes

☒ Add Accum Nodes

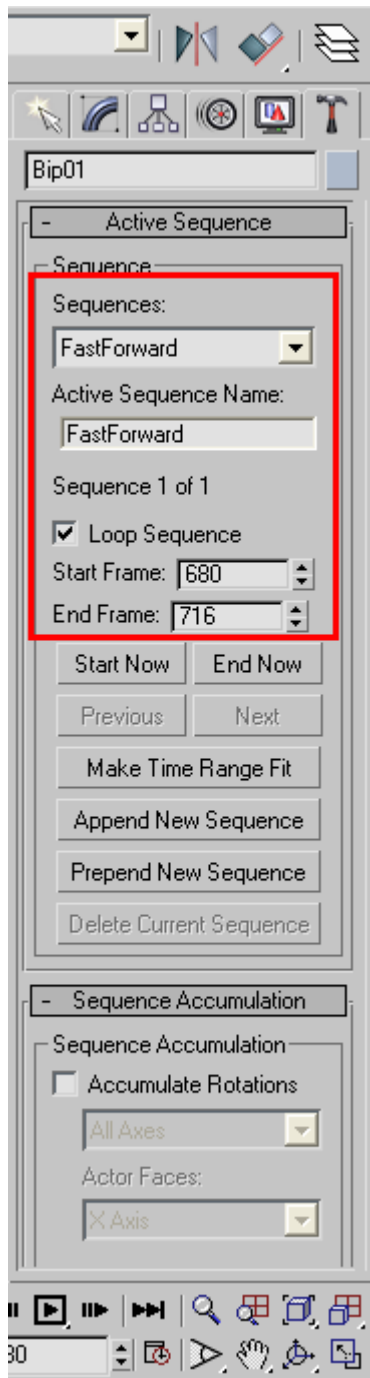
☐ Start Nifscope

Export Cancel

niftools.sourceforge.net [Wiki](#)

We have essentially used the same settings as we used for idle, except that we have changed the Priority to 30. Walk should have a higher priority than idle or it will sometimes not walk when it is supposed to.

Next lets do Running animation.



Change Active Sequence name to FastForward and change the Frame numbers to what you got from the time tags.

Export the file and name it as WalkFastForward.

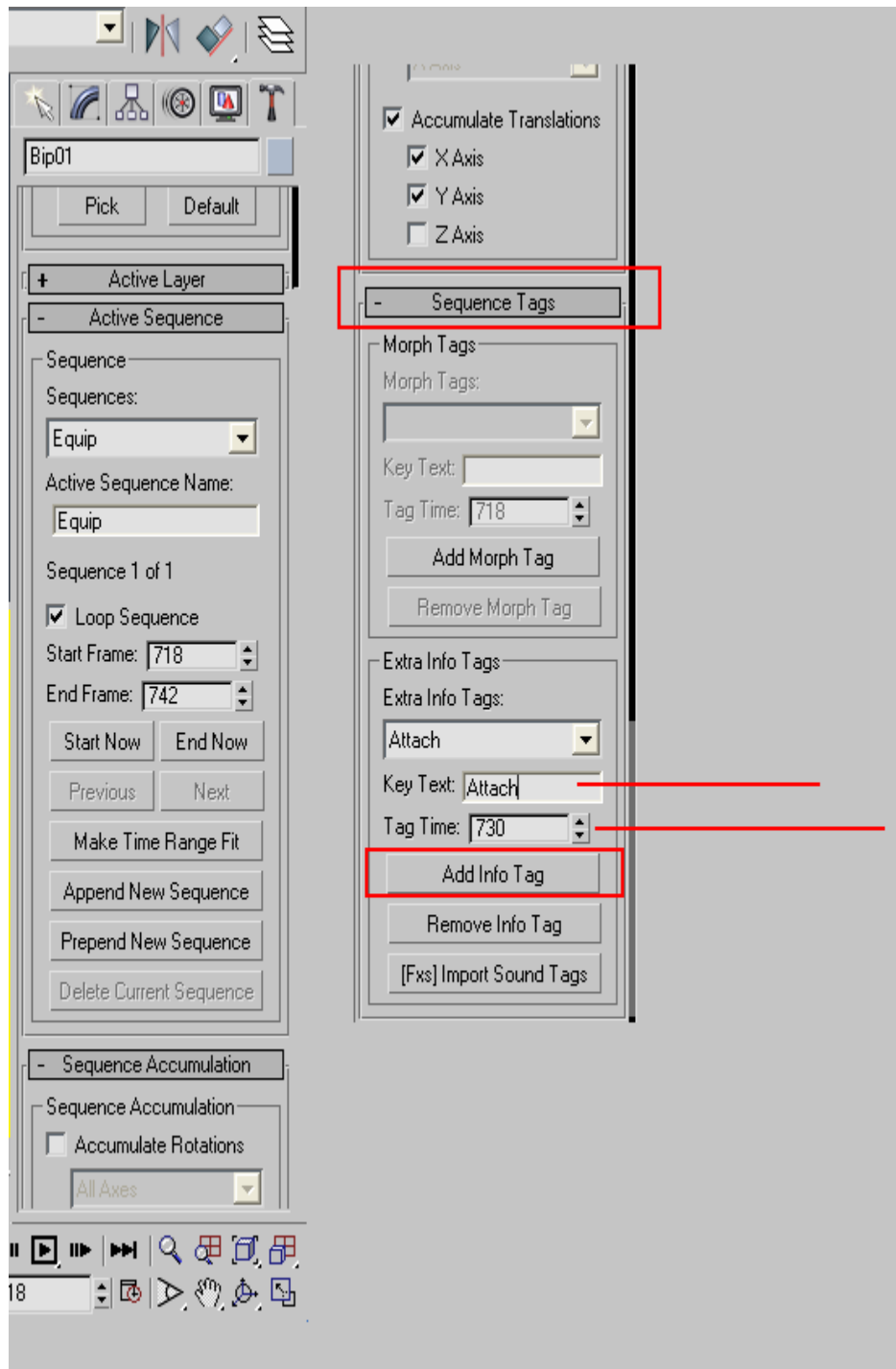
Export with the same settings as WalkForward above. FastForward will have the same priority as Forward (30).

Next do the same process for Death and Stagger. The active sequence names are “death” and “stagger” respectively and you need to save them as “death” and “stagger” respectively. Priority for both should be 70.

Next we are going to make Equip and Unequip ... the process for these is a little different.

As I said before I will use Idle1 as the Equip animation.

So enter the frame numbers and the Active Sequence name as shown below.



Next scroll down and expand “Sequence Tags”.

Click Add info Tag.

Type “Attach”

Change the Time to anything you like within the Start and End times.

Export the file and name it as handtohandequip and use the same settings as before but make the Priority = 55.

When done using the same setup, change Active Sequence name to “Unequip” and and change the tag “Attach” to “Detach”.

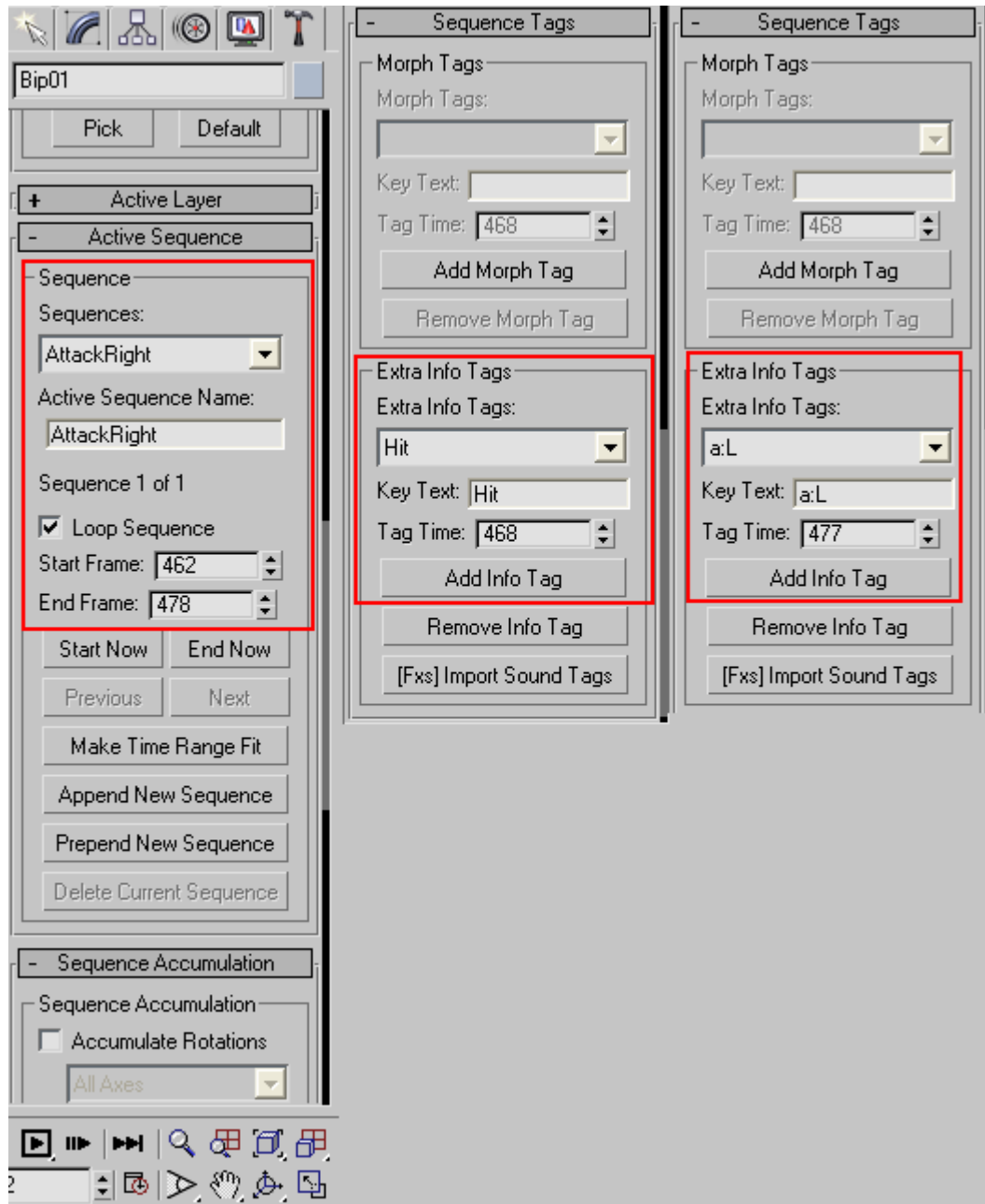
Export the file as handtohandunequip.

Use same settings as before, priority = 55.

Finally we will do Attacks.

Click Remove Info tags above to remove the tag you just added.

For the first attack:



Change Active Sequence Name to “AttackRight”.

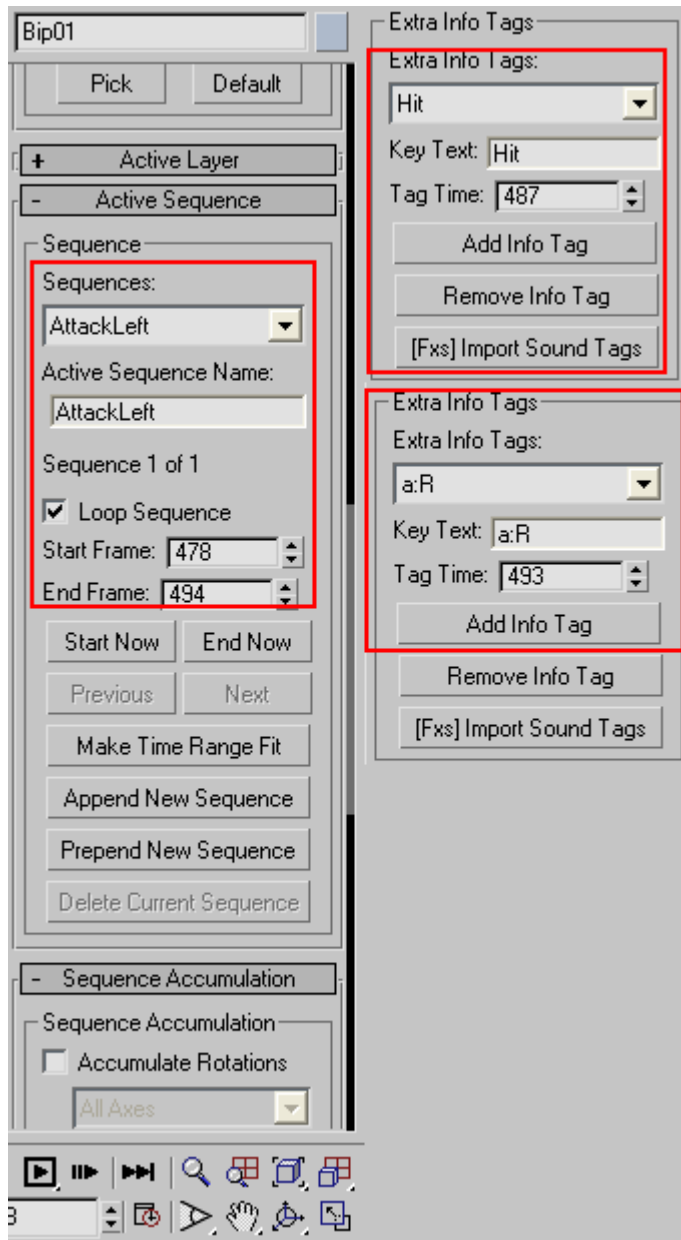
Change the frame numbers to the start and end you got from the Time tags.

Click ‘Add info Tag’. Change the name to Hit and frame number to what you got from the time tag (468).

Next again click ‘Add info tag’ to add another one. Name it “a:L” and set its frame to 1 frame before the end frame (477).

Export it with the name “handtohandattackright” and use the same settings as before but make sure priority = 55

For the second attack you need to follow the same procedure but you need to make a few changes.



Change Active Sequence name to AttackLeft.

Change Start and End frames.

Click Add Info Tag. Name it Hit and change the frame to Hit from the original time tags.

Again click Add info Tag, change its name to a:R and set its frame to 1 before the end (493).

Export it with the name “handtohandattackleft” and export with the previous settings priority = 55.

Now open skeleton.nif in nifscope and use Attack kf to view the animations you just made.

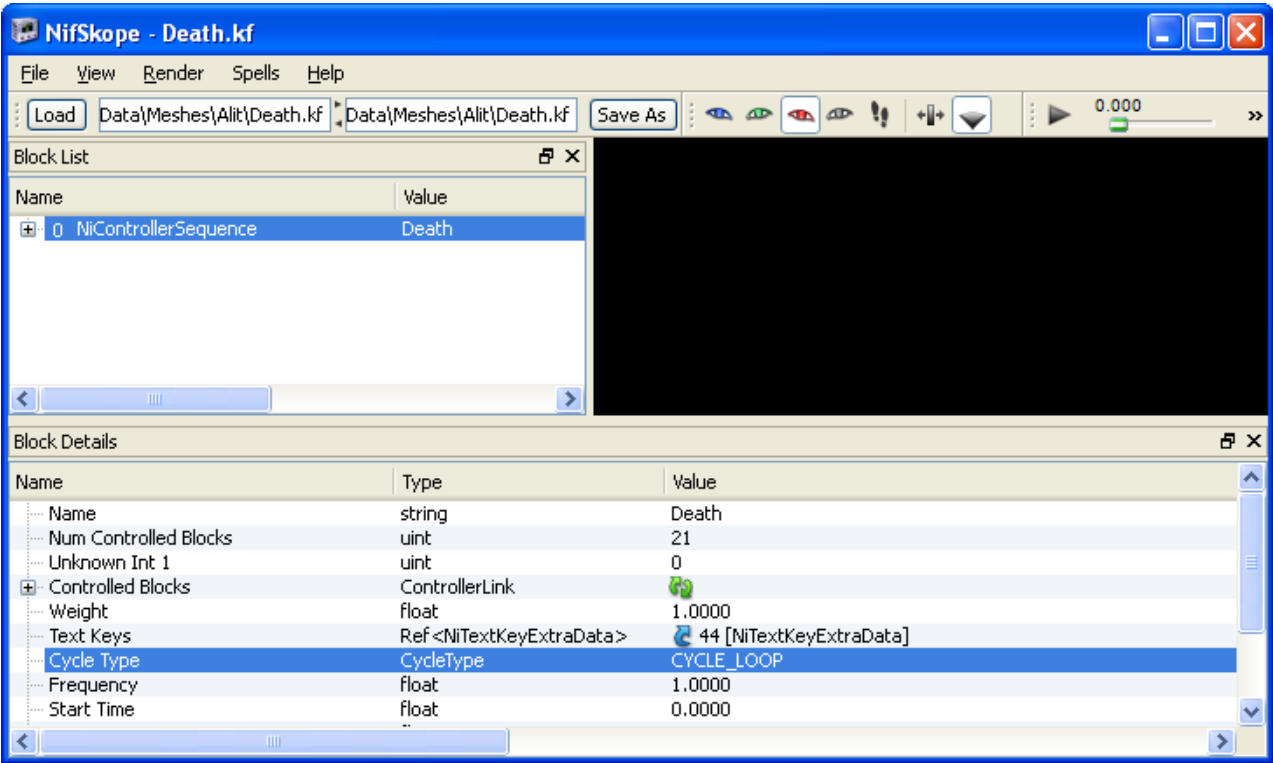
Click on Play and the skeleton should start moving. You want to make sure that each animation starts at the same exact pose. Minor differences in bone positions are acceptable but if there are great differences then the creature will flicker in the game.

Usually you can fix this by redoing the culprit animation ... making it start 1 or 2 frames early or late until its at nearly the same start pose as the others (you can see this in max as well as nifscope).

Anyways when you are done tweaking the animations you can close 3ds max.

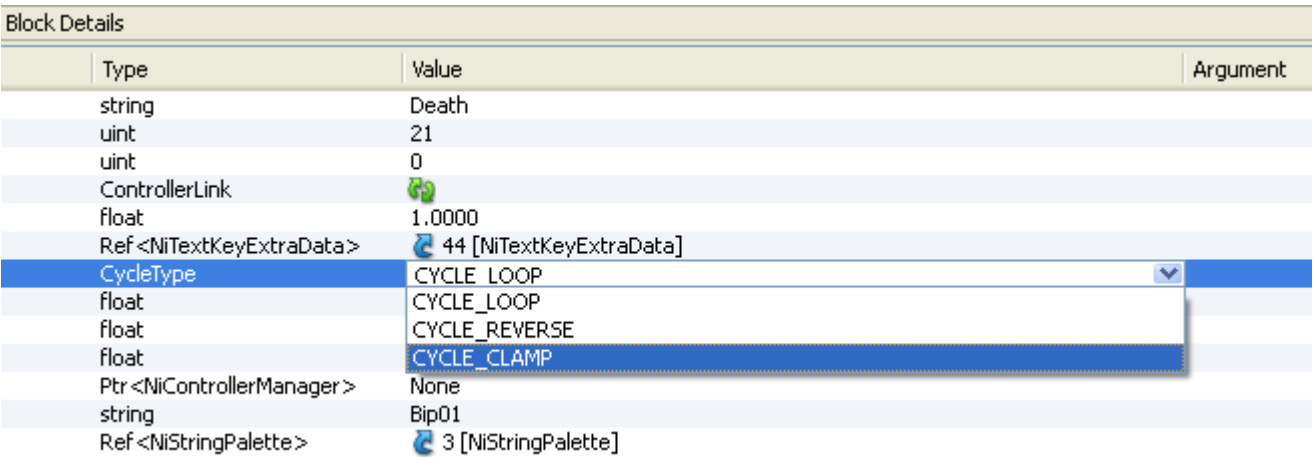
Next we need to first of all change a few things.

Open death.kf in nifscope.



You should see that in the Block Details Panel the cycle Type is set to “Cycle_Loop”.

You want to change this to “Cycle Clamp” (click on it and a list should appear).



SAVE the file when done.

You want to do the same thing to:

- Death.kf
- Stagger.kf
- handtohandequip.kf
- handtohandunequip.kf
- handtohandattackright.kf
- handtohandattackleft.kf

DO NOT do this to the remaining animations.

Later in the game if your creature repeatedly keeps on 'dying and resurrecting and dying again ...' then you did not do this step properly. Make sure you change loop to clamp and SAVE.

Finally we need to duplicate some of the animations.

Copy\Paste – Duplicate the following files:

- walkforward.kf
- walkfastforward.kf
- idle.kf

and rename the duplicates to:

- handtohandforward.kf
- handtohandfastforward.kf
- handtohandidle.kf

Finally you want to delete the original morrowind files if you copied them to your oblivion folder. Delete duskyalit.nif, xduskyalit.nif and xduskyalit.kf

You are done ... test your creature ingame ... if anything goes wrong make sure that you followed the steps correctly.

If some "part" of the creature does not animate in the game then that part uses morphs. If it's a minor part of the body (such as the antenna on Kwama workers) then you can simply remove this part in body.nif using nifscope. If it's a major part (such as the head of an ogrim) then sorry I don't know how to fix it.