



Art Asset Directory Structures, File Formats, & Naming Conventions

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ALL Relic Hunters art asset files have a **SOURCE** version and an **EXPORT** version, *except for reference and concept images*. The source file is the **original, raw** file to which anyone can refer if the export file has been corrupted or inadvertently over-written in Perforce. The export file is the **final, GAME READY** file that is used directly by our engine technology. We use MAX and Maya for creating *prototype* 3d character models. We use 3d Studio MAX for generating and completing *ALL full production* 3d models and associated animations. We use Adobe Photoshop and Painter to generate our texture-maps and user interface components. We use Gamebryo as the underpinnings for our game engine technology.

The following Directory Structure Rules are true:

Each artist associated with Relic Hunters (even in a *temporary* capacity) will have a “working” directory located here: <\\Server\projects\RelicHunters\Art\Working>.

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The *working* directory for each artist will include a series of sub-directories accounting for each-and-every art asset category required for the game:

YourName_Characters
YourName_Concepts
YourName_Drones
YourName_Environments
YourName_Gadgets
YourName_Props
YourName_SkyDomes
YourName_SpecialEffects
YourName_Terrain
YourName_Triggers
YourName_UI
YourName_Vegetation
YourName_Vehicles

- Each artist receives the identical working directory structure so that the Art team can quickly identify the origin of *any* art asset. *Accountability is our friend.*
- ***If an artist has generated a specific art asset, such as one of our lead characters, Basil, then, all art assets associated with Basil would need to be deposited into a newly-created-by-the-artist Basil directory that sits within YourName_Characters.***

- **PLEASE NOTE:** Specific art assets have been designated to contain multiple categories of art. A completed environment, for example, may contain buildings, props, vegetation, and static vehicles, **however, the individual art components of that environment all originate from their “home” directories.**
 - An environment art asset, for example, is created and deposited into **YourName_Environments**, and a super computer art asset is created and deposited into the **YourName_Props**.
 - The super computer art asset is, then, merged into and properly positioned within the environment art asset, as a static prop. Anyone can still access these *individual* components without having to sift through a *hybrid* environment file.
 - On the other hand, once an artist has merged the prop object into the larger environment file, then, that artist is responsible for copying all of the prop object-associated texture-map .DDS files into the environment directory as well.
 - Again, no Relic Hunters Art team member should ever have to search blindly for any art files.

As is standard “source control” protocol, approved and completed art assets, SOURCE and GAME READY, will be duplicated from <\\Server\projects\RelicHunters\Art\Working> and deposited into the associated art directories within Perforce: <\\Clients\RelicHunters\Art>.

Within this Perforce directory, an artist will find a similar set of directories designed to contain each major art asset category available in the game:

- Characters
- ConceptArt
 - Characters
 - Drones
 - Environments
 - Gadgets
 - Props
 - Puzzles
 - Storyboards
 - Structures (This art asset type is a hybrid; too large to be a prop but too small to be an environment)
 - Vehicles
- Drones
- Environments
- Gadgets
- Props
- **Sandbox** (This directory, during Prototype and Full Production project phases, will be off-limits)
- SkyDomes
- SpecialEffects
- Terrain
- Triggers
- UI
- Vegetation
- Vehicles

Approved and completed GAME READY art assets will also be duplicated from <\\Topaz\projects\InfinityKids\Art\Working> and deposited into the associated game data directory within Perforce: <//RelicHunters/Game/Data>.

- There will be no sub-directories within the Data directory.
- No raw, SOURCE files of any kind are allowed in the Data directory.
 - The game engine will choke if any file type other than GAME READY makes its way into the Data directory.

The following File Format and Naming Convention Rules are true:

- 01 – ALL reference image names will begin with “RH_” (RelicHunters_).
- 02 – ALL reference images should be saved in or converted to .JPG file format.
- 03 – ALL concept image names should begin with “Concept_”.
- 04 – **ALL concept image iterations are referred to as “Stages”.**
- A properly named set of iterative concept images would be:
 - Concept_Mansion_Stage01.JPG.
 - Concept_Mansion_Stage02.JPG.
 - Concept_Mansion_Stage03.JPG.
 - **A concept stage consisting of multiple images** (for displaying different profiles of the same character, for example) would be:
 - Concept_Mansion_Stage01_01.JPG.
 - Concept_Mansion_Stage01_02.JPG.
 - Concept_Mansion_Stage01_03.JPG.
 - **Any concept image that is a one-off would be displayed as:**
 - **Concept_Mansion.JPG.**
- 05 – **ALL concept images should be saved in two file formats (SOURCE and PUBLIC):**
- SOURCE is unavailable to anyone outside of the Art team (unless by special request or *an absolute emergency*), will be in .PSD format.
 - PUBLIC is available to anyone and everyone outside of the Art team, will be in .JPG format.
- 06 – **SOURCE 3D models, regardless of subject matter, are saved in .MAX file format.**
- **Please NOTE:** Character 3D models present a special case, as, with rare exception, they will begin as Maya files, and, then, be converted into .MAX files. So, Maya files are PRELIMINARY and .MAX files are SOURCE.
- 07 – **All SOURCE 3D character animations are saved in both .MAX and .BIP file format.**
- Saving 3D character animations in .BIP file format allows for quick-and-easy application of one animation, for a particular character, onto another completely different character.
- 08 – **All SOURCE texture-maps are saved in .PSD file format**, because source texture-maps are meant to be flexible, multi-layered, and uncompressed.
- 09 – **All EXPORT file formats are .NIF (Static-Rigged and Static-Non-Rigged Geometry), .KF (Single Animation) files, and .KFM (List of required Animations).**
- Texture-maps are always exported as *separate* .NIF files.
 - **Please NOTE:** Special Effects and Ambient Environment animations are the only animated art assets which do *not* require .KF or .KFM files.
 - Animations associated with these art asset types can be exported directly as animated .NIF files.
 - **Please NOTE:** Drone or Vehicle animations can potentially require multiple animations, and, thus, would require .KF *and* .KFM files.

- 10 – **GAME READY art assets are defined as complete, thoroughly tested for errors, and ready to be checked into Perforce for inclusion in the very latest game build.**
- 11 – **All GAME READY texture-maps are saved in .DDS file format, which are exported as .NIF files.**
- The .DDS file format comes in a variety of flavors:
 - DXT1 (Standard RGB format with NO Alpha Channel)
 - DXT1 (Standard RGB format with 1-Bit Alpha Channel)
 - DXT3 (Standard RGB format with 4-Bit Alpha Channel)
 - DXT5 (Standard RGB format with 8-Bit Alpha Channel)
- 12 – **While all art assets will be shared whenever possible, it will *not* be necessary to create a *shared* naming identifier for any shared files.**
- 13 – **All texture-map file names, SOURCE and GAMEREADY, follow this pattern:**
- The texture-map file names begin with “TEX_”.
 - Followed by the name of the art asset for which the texture-map has been generated.
 - Followed by the type of texture-map. Some art assets require only the standard “diffuse” texture-maps and other art assets may require diffuse, normal, specular, glow, and parallax texture-maps.
 - Diffuse texture-maps are specified by “_DIF”.
 - Normal texture-maps are specified by “_NML”.
 - Diffuse Decal texture-maps are specified by “_DCD”.
 - Normal Decal texture-maps are specified by “_DCN”.
 - Specular texture-maps are specified by “_SPC”.
 - Glow texture-maps are specified by “_GLW”.
 - Parallax texture-maps are specified by “_PLX”.
 - Followed by the appropriate file extension.
 - SOURCE texture-maps are specified by “.PSD”.
 - GAME READY texture-maps are specified by “.DDS”.

Texture-Map File Format Example for Characters –

Art Format: TEXTURE_CHARACTER_GENDER_NAME_VERSION##_DIF.PSD
 Translation: TEXTURE_CHARACTER_MALE_BASIL_VERSION00_DIFFUSE.PSD
 Source: TEX_C_M_Basil_VER00_DIF.PSD
 Game Ready: TEX_C_M_Basil_VER00_DIF.DDS

Texture-Map File Format Example for Drones –

Art Format: TEXTURE_DRONE_NAME_VERSION##_DIF.PSD
 Translation: TEXTURE_DRONE_SCORPIO_VERSION00_DIFFUSE.PSD
 Source: TEX_D_Scorpio_VER00_DIF.PSD
 Game Ready: TEX_D_Scorpio_VER00_DIF.DDS

Texture-Map File Format Example for Gadgets –

Art Format: TEXTURE_GADGET_NAME_VERSION##_DIF.PSD
 Translation: TEXTURE_GADGET_BOUNCEBOOTS_VERSION00_DIFFUSE.PSD
 Source: TEX_G_BounceBoots_VER00_DIF.PSD
 Game Ready: TEX_G_BounceBoots_VER00_DIF.DDS

Texture-Map File Format Example for Character Props –

Art Format: TEXTURE_PROP_TYPE_NAME_VERSION##_DIF.PSD
 Translation: TEXTURE_PROP_CHARACTER_STATUE_VERSION00_DIFFUSE.PSD
 Source: TEX_P_C_Statue_VER00_DIF.PSD
 Game Ready: TEX_P_C_Statue_VER00_DIF.DDS

Texture-Map File Format Example for Environment Props –

Art Format: TEXTURE_PROP_TYPE_NAME_VERSION##_DIF.PSD
Translation: TEXTURE_PROP_ENVIRONMENT_STATUE_VERSION00_DIFFUSE.PSD
Source: TEX_P_E_Statue_VER00_DIF.PSD
Game Ready: TEX_P_E_Statue_VER00_DIF.DDS

Texture-Map File Format Example for Sky Domes –

Art Format: TEXTURE_SKYDOME_NAME_VERSION##_DIF.PSD
Translation: TEXTURE_SKYDOME_NOON_VERSION00_DIFFUSE.PSD
Source: TEX_SKY_Noon_VER00_DIF.PSD
Game Ready: TEX_SKY_Noon_VER00_DIF.DDS

Texture-Map File Format Example for Special Effects –

Art Format: TEXTURE_SPECIALEFFECT_NAME_VERSION##_DIF.PSD
Translation: TEXTURE_SPECIALEFFECT_DUST_VERSION00_DIFFUSE.PSD
Source: TEX_SPFX_Dust_VER00_DIF.PSD
Game Ready: TEX_SPFX_Dust_VER00_DIF.DDS

Texture-Map File Format Example for Terrain –

Art Format: TEXTURE_TERRAIN_TYPE_NAME_VERSION##_DIF.PSD
Translation: TEXTURE_TERRAIN_MOUNTAIN_ROAD_VERSION00_DIFFUSE.PSD
Source: TEX_T_Mountain_Road_VER00_DIF.PSD
Game Ready: TEX_T_Mountain_Road_VER00_DIF.DDS

Texture-Map File Format Example for Vegetation –

Art Format: TEXTURE_VEGETATION_TYPE_NAME_VERSION##_DIF.PSD
Translation: TEXTURE_VEGETATION_TREE_PALM_VERSION00_DIFFUSE.PSD
Source: TEX_VEG_Tree_Palm_VER00_DIF.PSD
Game Ready: TEX_VEG_Tree_Palm_VER00_DIF.DDS

Texture-Map File Format Example for Vehicles –

Art Format: TEXTURE_VEHICLE_TYPE_VERSION##_DIF.PSD
Translation: TEXTURE_VEHICLE_PORSCHE_VERSION00_DIFFUSE.PSD
Source: TEX_VEH_Porsche_VER00_DIF.PSD
Game Ready: TEX_VEH_Porsche_VER00_DIF.DDS

14 – All 3D model file names, SOURCE and GAMEREADY, follow this pattern:

- The 3D file names begin with an **identifier** for the type of 3D art asset.
 - Identifiers are listed at the bottom of this document, in the identifier glossary (e.g. C = Character, E = Environment, and P = Prop)
 - **An identifier would be followed by the name of the art asset for which the 3D model has been generated.**
 - The name of the art asset varies from 3D model to 3D model and can include details such as gender for characters.
 - Followed by the appropriate file extension.
 - **SOURCE 3D models are specified by:**
 - “.MAX” – 3D Studio MAX file format
 - “.MA” – Maya ASCII file format
 - “.MB” – Maya Binary file format
 - ***Please NOTE:*** Even though Maya file formats will *only* be associated with SOURCE 3D character models, some artists prefer ASCII output to Binary output when working in Maya.
 - **Maya Binary is *not* intended to be read or modified.** It contains some Binary and some text.

- **Maya ASCII *can be edited***, but it is not in a transparent form. The data is used as input to Maya functions, so geometrical details like vertex and triangle lists are not available.
- **GAME READY 3D models are specified by (Also SEE rule 9):**
 - “.NIF” – Static-Rigged and Static-Non-Rigged Geometry
 - “.KF” – Single Animation
 - “.KFM” – List of Required Animations

3D File (Models and Animations) Format Example for Characters –

Art Format: IDENTIFIER_GENDER_NAME_VERSION##.MAX
 IDENTIFIER_GENDER_NAME_VERSION##.MA
 IDENTIFIER_GENDER_NAME_VERSION##.MB
IDENTIFIER01_IDENTIFIER02_GENDER_ANIMATION_VERSION##.MAX

Translation: CHARACTER_MALE_BASIL_VERSION00.MAX
 CHARACTER_MALE_BASIL_VERSION00.MA
 CHARACTER_MALE_BASIL_VERSION00.MB
ANIMATION_CHARACTER_MALE_WALK_VERSION00.MAX

- **For animation files, VERSION will refer to the different types of a particular animation:**
 - Walk_Standard, Walk_Athletic, and Walk_Heavy, from an animation description list, will display as:
 - Walk_VER00, Walk_VER01, and Walk_VER02
 - Any animation files that do *not* exist as more than one type will continue to be referred to as VER00.

Source: C_M_Basil_VER00.MAX
 C_M_Basil_VER00.MA
 C_M_Basil_VER00.MB
 A_C_M_Walk_VER00.MAX

Game Ready: C_M_Basil_VER00.NIF
 A_C_M_Walk_VER00.KF
 A_C_M_Basil_VER00.KFM

3D File Format Example for Environments –

Art Format: IDENTIFIER_NAME_VERSION##.MAX
 Translation: ENVIRONMENT_MANSION_VERSION00.MAX
 Source: E_Mansion_VER00.MAX
 Game Ready: E_Mansion_VER00.NIF

3D File Format Example for Drones –

Art Format: IDENTIFIER_NAME_VERSION##.MAX
 IDENTIFIER_NAME_VERSION##.MA
 IDENTIFIER_NAME_VERSION##.MB
IDENTIFIER01_IDENTIFIER02_NAME_ANIMATION_VERSION##.MAX

Translation: DRONE_SCORPIO_VERSION00.MAX
 DRONE_SCORPIO_VERSION00.MA
 DRONE_SCORPIO_VERSION00.MB
ANIMATION_DRONE_SCORPIO_CRAWL_VERSION##.MAX

Source: D_Scorpio_VER00.MAX
 D_Scorpio_VER00.MA
 D_Scorpio_VER00.MB
 A_D_Scorpio_Crawl_VER00.MAX

Game Ready: D_Scorpio_VER00.NIF
 A_D_Scorpio_Crawl_VER00.KF
 A_D_Scorpio_VER00.KFM

3D File Format Example for Gadgets –

Art Format: IDENTIFIER_NAME_VERSION##.MAX
Translation: GADGET_BOUNCEBOOTS_VERSION00.MAX
Source: G_BounceBoots_VER00.MAX
Game Ready: G_BounceBoots_VER00.NIF

3D File Format Example for Character Props –

Art Format: IDENTIFIER_TYPE_NAME_VERSION##.MAX
Translation: PROP_CHARACTER_BOOMERANG_VERSION00.MAX
Source: P_C_Boomerang_VER00.MAX
Game Ready: P_C_Boomerang_VER00.NIF

3D File Format Example for Environment Props –

Art Format: IDENTIFIER_TYPE_NAME_VERSION##.MAX
Translation: PROP_ENVIRONMENT_STATUE_VERSION00.MAX
Source: P_E_Statue_VER00.MAX
Game Ready: P_E_Statue_VER00.NIF

3D File Format Example for Sky Domes –

Art Format: IDENTIFIER_NAME_VERSION##.MAX
Translation: SKYDOME_NOON_VERSION00.MAX
Source: SKY_Noon_VER00.MAX
Game Ready: SKY_Noon_VER00.NIF

3D File Format Example for Special Effects –

Art Format: IDENTIFIER_NAME_VERSION##.MAX
Translation: SPECIALEFFECT_DUST_VERSION00.MAX
Source: SPFX_Dust_VER00.MAX
Game Ready: SPFX_Dust_VER00.NIF

3D File Format Example for Terrain –

Art Format: IDENTIFIER_TYPE_NAME_VERSION##.MAX
Translation: TERRAIN_MOUNTAIN_ROAD_VERSION00.MAX
Source: T_Mountain_Road_VER00.MAX
Game Ready: T_Mountain_Road_VER00.NIF

3D File Format Example for Vegetation –

Art Format: IDENTIFIER_VEGETATION_TYPE_NAME_VERSION##.MAX
Translation: VEGETATION_TREE_PALM_VERSION00.MAX
Source: VEG_Tree_Palm_VER00.MAX
Game Ready: VEG_Tree_Palm_VER00.NIF

3D File Format Example for Vehicles –

Art Format: IDENTIFIER_TYPE_VERSION##.MAX
IDENTIFIER01_IDENTIFIER02_TYPE_ANIMATION_VERSION##.MAX
Translation: VEHICLE_PORSCHE_VERSION00.MAX
ANIMATION_VEHICLE_PORSCHE_SUSPENSIONBOUNCE_VERSION00.MAX
Source: VEH_Porsche_VER00.MAX
A_VEH_Porsche_SuspensionBounce_VER00.MAX
Game Ready: VEH_Porsche_VER00.NIF
A_VEH_Porsche_SuspensionBounce_VER00.NIF

15 – All user interface file names will begin with “UI_”.

- Followed by the category of UI art asset (e.g. Front End or In-Game).
- Followed by the type of that category of UI art asset (e.g. Options).

- Followed by the subject of that type of that category of UI art asset (e.g. Audio).
- Followed by the state (normal, mouse-over, selected) of that subject of that type of that category of UI art asset (e.g. selected).

Source Art Format: UI_CATEGORY_TYPE_SUBJECT_STATE.PSD
 Translation: UI_FrontEnd_Options_Audio_Selected.PSD
 Final Art Result: UI_FrontEnd_Options_Audio_Selected.DDS

- **PLEASE NOTE:** All individual user interface art asset files will be programmatically compiled into one massive texture-page, or, one set of massive texture-pages.

16 – All 3D model and texture-map art assets will include a VERSION number, and each version number will begin with “00”.

- Version numbers allow us to guard against the sudden requirement of *additional versions* of art assets, thus protecting the naming convention. There are no exceptions.
 - A specific 3D art asset, such as a mansion, for example, may require multiple texture-maps. The mansion may be version 00, thus, a texture-map naming convention for this mansion would include an additional “_##” before the file extension:
 - TEX_E_Mansion_VER00_00.DDS
 - TEX_E_Mansion_VER00_01.DDS
 - TEX_E_Mansion_VER00_02.DDS
 - In other games, “_00, _01, and _02” might refer to “_Leather, _Stucco, and _Wood”. This is *not* the case with Relic Hunters.
 - If a specific 3D art asset only requires one texture-map version, then, for example, the name will simply read as TEX_E_Mansion_VER00.DDS

17 – All 3D models within an environment, or *game level*, must be associated with a placement node. All interactive 3D models must *also* be associated with a mount node.

- **A placement node (“N_”)** is used as a “collection area” for one or more 3D objects.
 - If a library, for example, contained hundreds of books, ten bookshelves, six tables, and twenty chairs, *all* of those 3D objects would be linked to one placement node, **N_E_Library** (Node_Environment_Library).
- **A mount node (“N_M_”)** would be used as a “mount point” from where the player character could approach and interact with an object-of-interest.
 - If the twelfth chair out of twenty chairs within that library, for example, was *interactive*, then, *that* chair would be linked to *one* mount node, **N_M_P_E_Chair12_VER00** (Node_Mount_Prop_Environment_Chair12_Version00).
 - This mount node would, in turn, be linked to the placement node, N_E_Library, which is at the top of the hierarchy for the library environment.

18 – All character models *must* be associated with a specific, unchanging set of nodes.

SEE InfinityKids_Art_Pipeline_Characters.doc for further details. These nodes do not follow the “N_” naming convention, as they are part of an enhancement of the character rig originally utilized for Arabian Lords:

- ACCUM_NODE
- CAMERA_NODE
- HAT_NODE
- HANGING_PULL_NODE

- LH_ATTACH_NODE
- RH_ATTACH_NODE
- TORSO_PULL_NODE
- UI_NODE
- WAIST_PULL_NODE

19 – Relic Hunters Identifier Glossary:

- **A** = Animation
- **ABV** = Alternate Bounding Volume
- **BB** = Bounding Box
- **C** = Character
- **Concept** = Concept Art
- **D** = Drone
- **E** = Environment
- **G** = Gadget
- **RH** = Relic Hunters
- **LOD** = Level of Detail (Progressive Downgrades to Geometry)
- **N** = Node
- **M** = Mount
- **P** = Prop (Non-Specific, Stand-Alone, 3D Object of Any Kind)
- **SKY** = Sky Box / Dome
- **SPFX** = Special Effects
- **Stage** = One of Several Versions of a Piece of Concept Art
- **STR** = Structure
- **T** = Terrain
- **VEG** = Vegetation
- **VEH** = Vehicle
- **VER** = Version

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