

Avatar Scripts

Concept

Overview

Give avatar authors the ability to add interface scripts to their avatars. When an end user wears an avatar, any associated avatar scripts will run automatically. No user action is required. Also, when the end user changes avatars, the previously running scripts will be automatically terminated.

Value Proposition

With the development of the [Hair Flow app](#). It is now possible to animate an avatar's hair with an interface script. However, in order for this to work the user must manually run the hair flow script.

With the addition of this feature, users can add the hair animation script directly to the avatar's FST file. The system will automatically run the script when the avatar is worn.

This also gives us the ability to add avatars with flowing hair or other special effects to the Marketplace.

High Level Description

User Description

A user can wear an avatar that has "special effects", such as moving hair, in the same way they wear avatars now. No special actions are required by the user to run a scripts manually.

An avatar author can add "special effects" to their avatar by including a `script = http://example.com/hair.js` line in the avatar FST file.

The avatar scripts themselves only run on the client that is wearing the avatar. Other users in the domain will see the avatar, but they will not run the scripts.

User Flow (end user)

- A user browses the Marketplace and discovers an avatar with flowing hair.
- The user decides to purchase and wear that avatar.
- The users avatar will change to the desired avatar and that avatar's hair should animate dynamically as expected.

User Flow (creator)

- A avatar creator uses the Edit > Package Model... dialog to create a fst file associated with an FBX file
- In the Package Model dialog there will be an additional script field allowing the user to enter a path to a local JavaScript file. This file will be copied into the same directory as the avatar fbx and fst file.
- After this process the resulting package can be uploaded to the Marketplace or other hosting service.

Interactions

This feature interacts with:

- **Marketplace Avatar Upload** - It should be possible for content creators to upload any scripts associated with the avatar, just like they can upload textures and models.
- **Marketplace Avatar Validation** - After an avatar has been uploaded to the store, the fst file must be checked to see that it does not include external URLs. Only relative urls should be considered safe.
- **Blockchain Avatar Certification** - The Discovery team must be notified when this feature is online, so that they can include the script field into the certification process.
- **Overview Documentation** - The grav documentation will need to be updated with a description of this new script type.

Release

Technical Description

Scope

One week for implementation and testing

Blockers

No known blockers

Technical Description

Avatar Scripts should behave identically to and have access to the same JavaScript API's that interface scripts do. The only difference is that the scripts themselves are started and stopped when an avatar is worn or removed.

It is critical that Script.scriptEnding signal is triggered, given the interface script the ability to clean up after itself before it is terminated.

Also the FST parsing must be able to have zero or more script fields. Proposed syntax:

```
script = http://example.com/absolute_url.js  
  
script = relative_url.js
```

Both absolute and relative URLs should be supported. Relative urls should use the FST file itself as the base url. This is the same as how the filename and textures fields work.

The Model Packager dialog will have to be modified to include support for Avatar Scripts.