



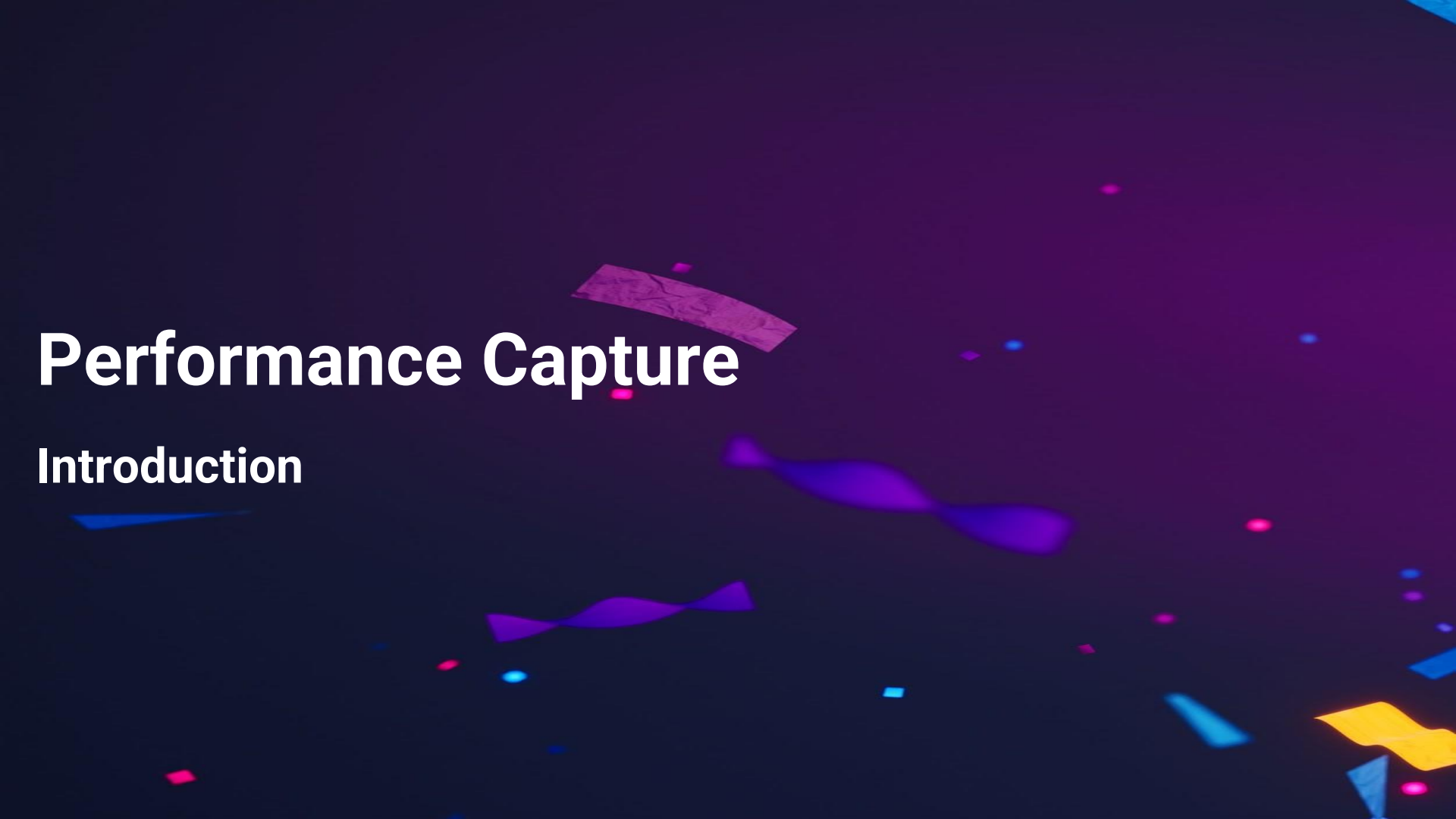
Unreal Fest 2024 Seoul

Getting the Most out of Performance Capture in UE and UEFN

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Performance Capture

Introduction



Virtual Production Visualization Guide

QR Codes to Capture





Performance Capture Systems

Optical.

Inertial

Optical Capture Systems



Position Based

Highest fidelity and most realistic

Support multiple actor's props and cameras

Requires Support Infrastructure

Not very portable

Expensive

Actors need to wear suits with markers

Face Capture

Inertial Capture Systems



Pose Based

Varied use case

Cost from low to high

IMU's placed on the body with strap or within a suit

Can hide within a costume

Data can be transmitted wirelessly

Can be prone to inference

Actor data can drift during performance

Pose Based System

Captures the actor's motions relative only to himself.

Captures each actor in relation to a fixed location somewhere in the actor's hip.

Position Based System

Captures actors, props and camera motions relative to a fixed location in space.

Captures each actor prop and camera relative to an XYZ origin coordinate location (0,0,0)

Use a Pose system when:

During capture, actor(s) will not physically interact with other actors, or with tracked props.

When not concerned with tracking a camera for the background behind the character(s).

Use a Positional system when:

Multiple characters being captured together, and they need to accurately interact

Prop Interaction

The Camera is being tracked and required to line up to the captured action.

Plausible motion



Inertial - Pose Based

Accurate motion



Optical -Position Based

Optical Capture with prop

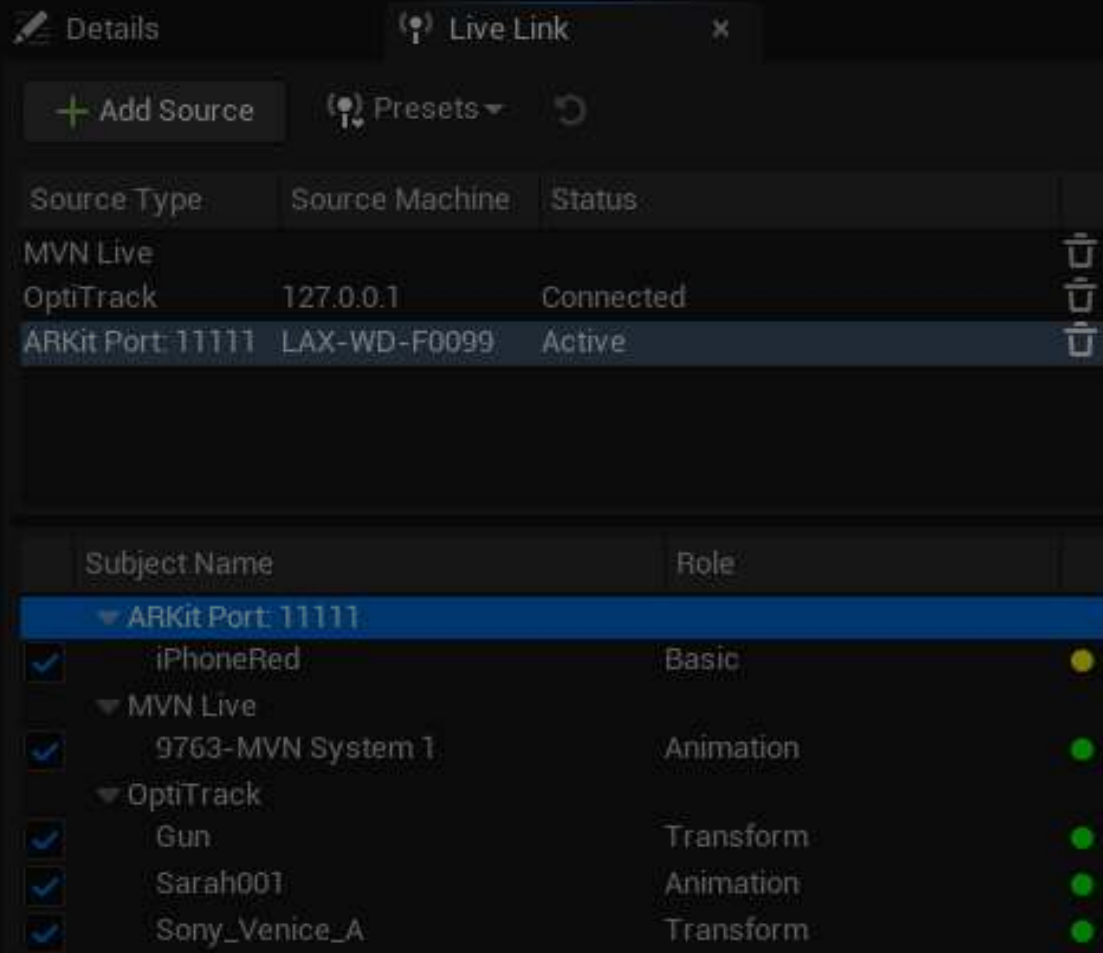


Introduction to Live Link

What is Live Link?

Technology for connecting to real-time streams of animation.

Live Link Plugins provided by capture system



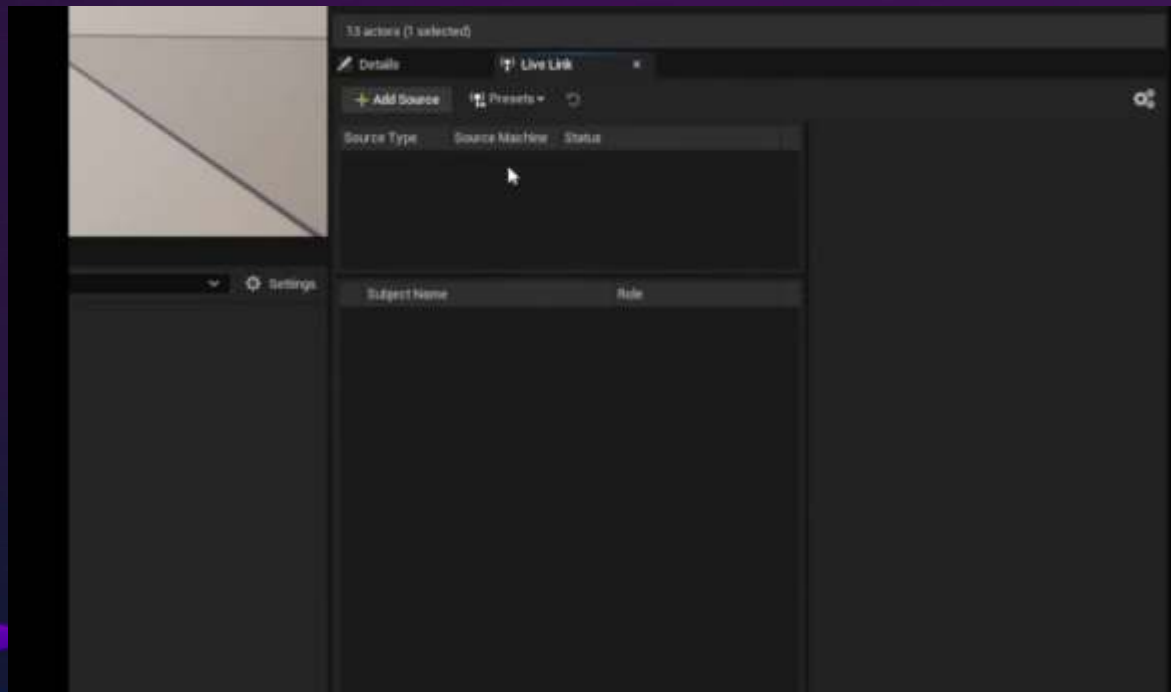
Live Link Client

Manage Sources

Manage Subjects

Static Data

Frame Data



Realtime Performance Visualization

Remapping motion verses Re targeting

Realtime Visualization

Live Link data validation

Source to target relationship

Live Retargeting adjustments

Actors performance adjustments



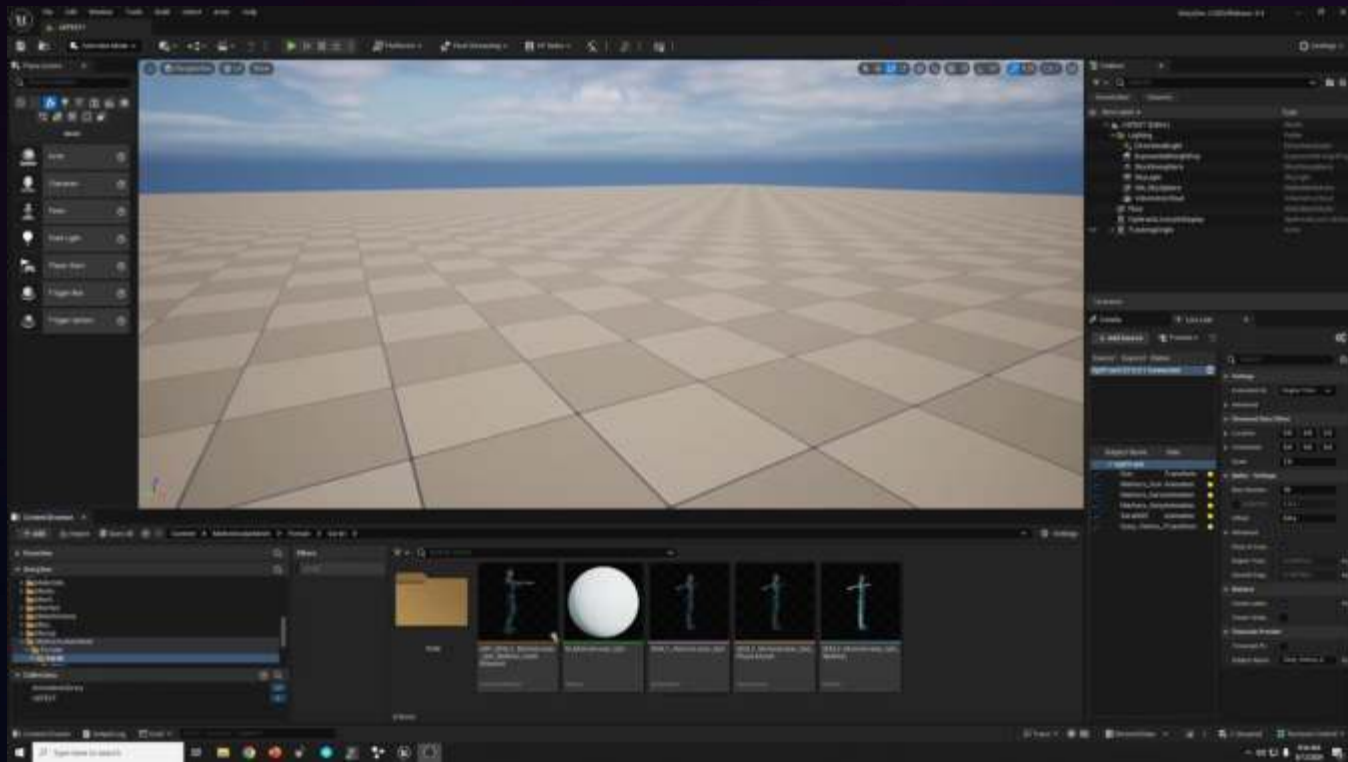
Setting up The Source Actor

Anim BP to connect Live Link data

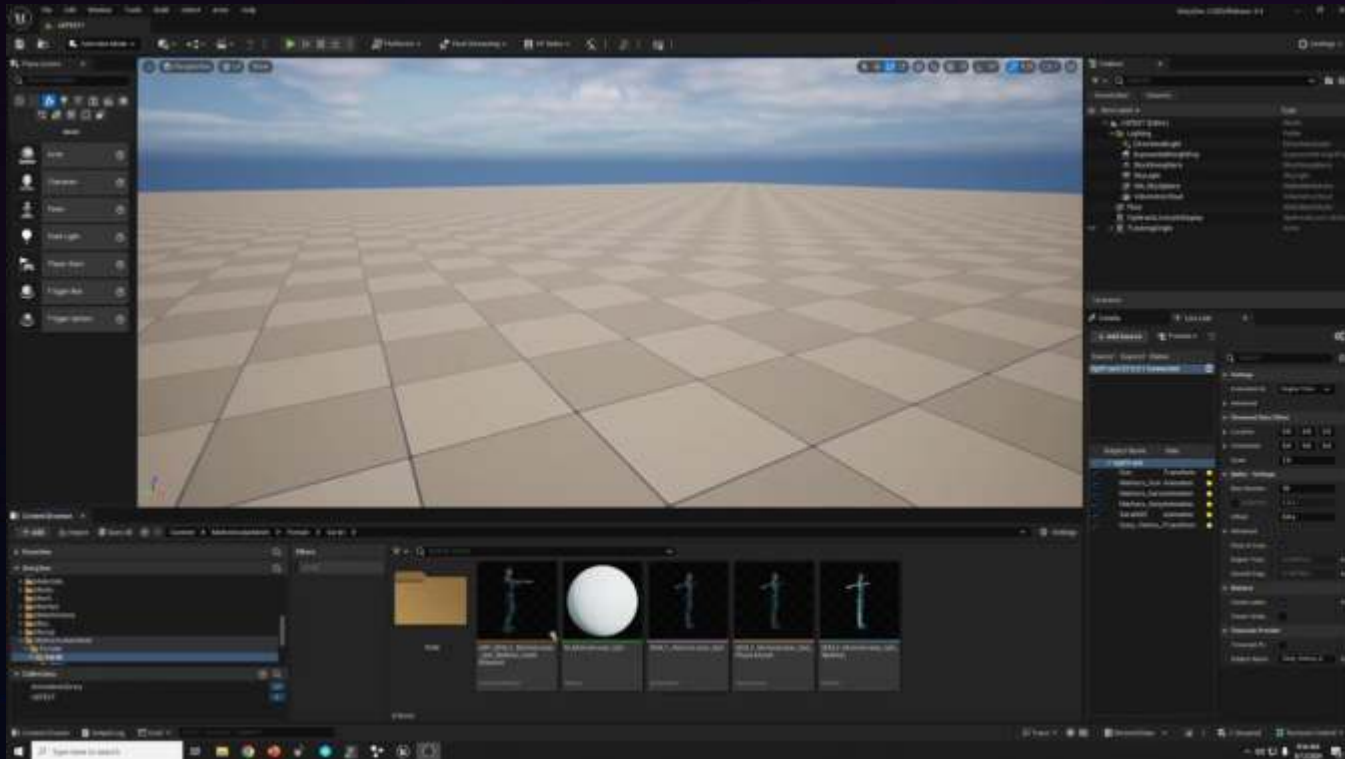
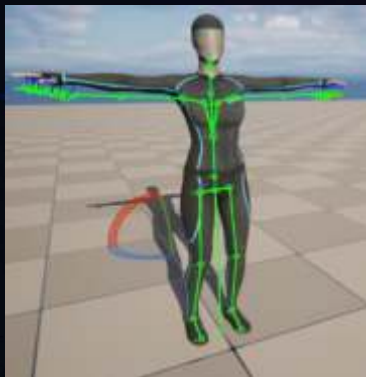
Scale the Source Actor

Create Source IK and Retargeting
Asset

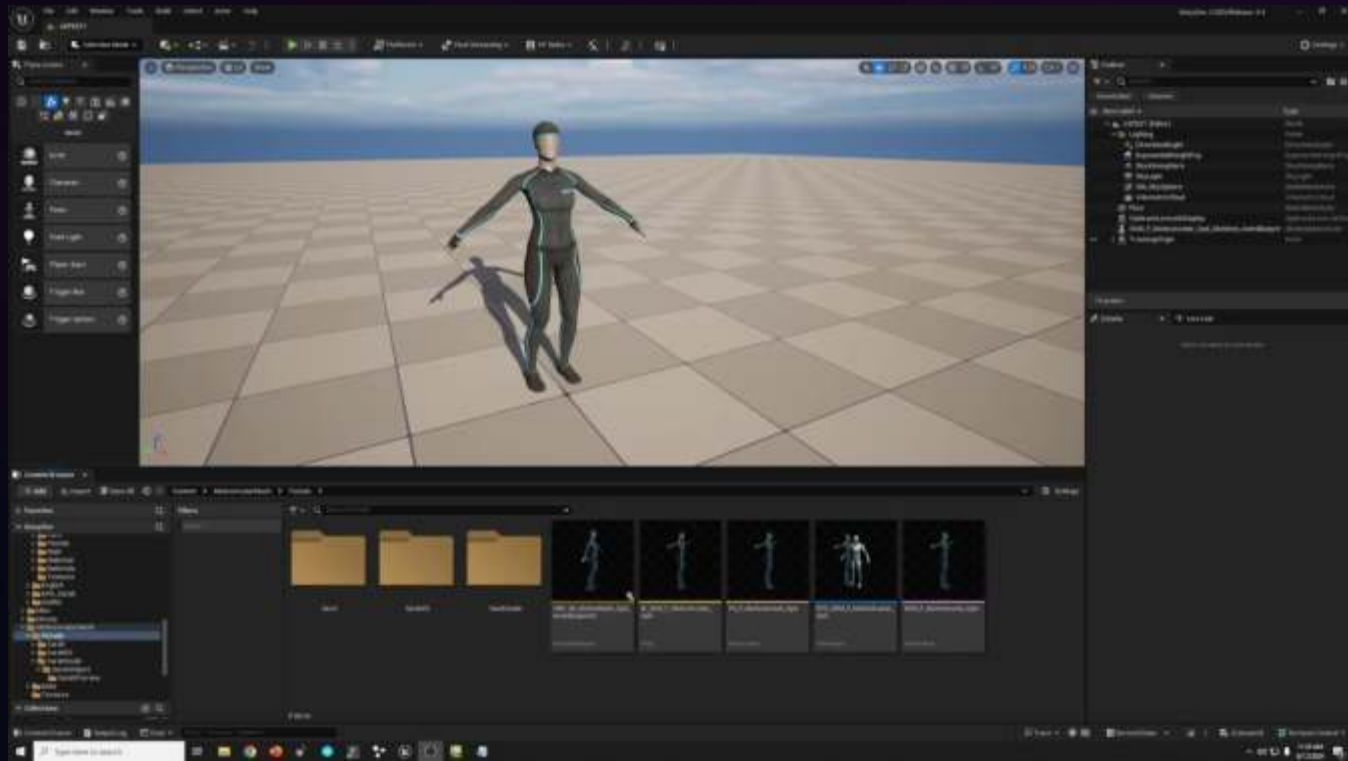
Source Actor Animation BP



Scaling of Source Actor to match Live Link data



Scaling of
Source Actor
to match Live
Link data



**Compare
Scaled to
Un Scaled
Source Actor**





Full Body IK for Biped

EDC Tutorial

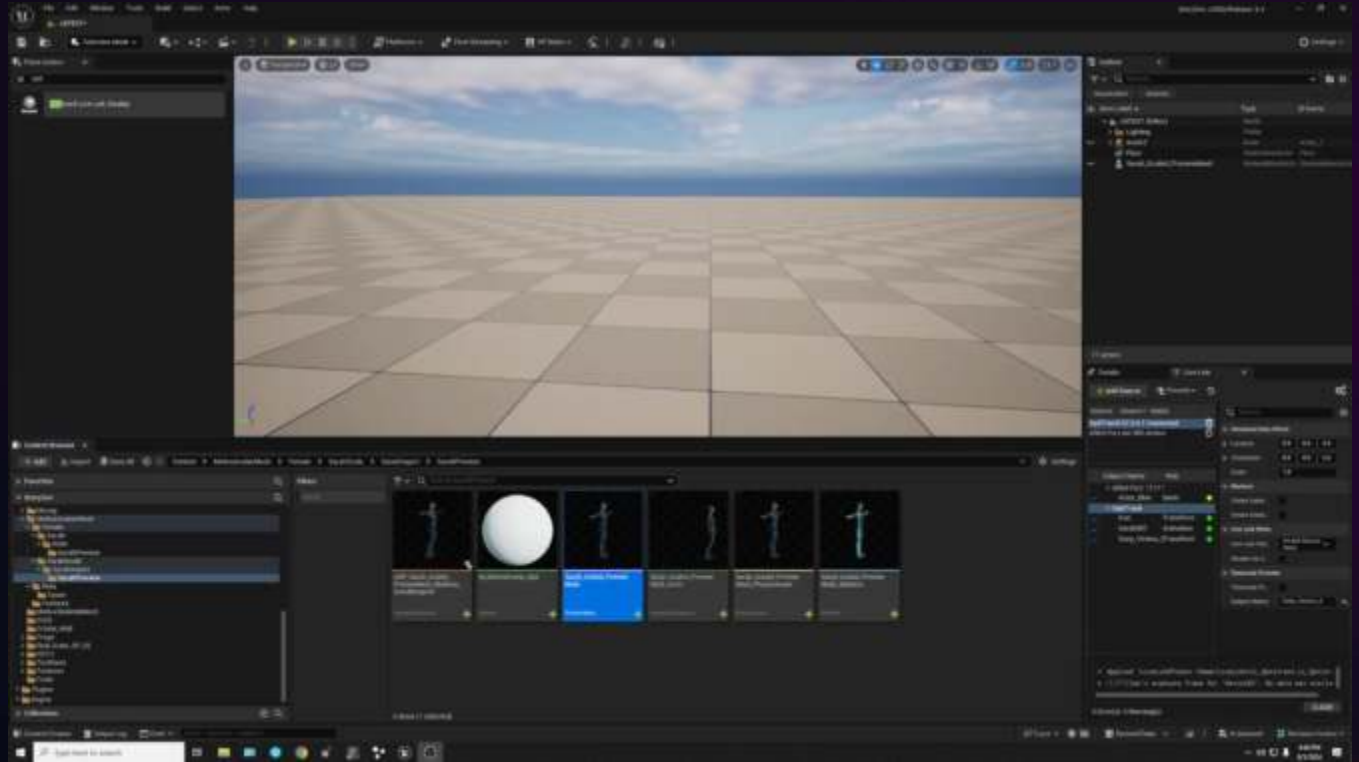
Source Actor Setup

IK and RTG Assets



Source Actor Setup

IK and RTG Assets



Target
Character

IK Asset



Source and
Target

RTG Setup



Target Animation Blueprint



Preview Target Motion



Target Character

IK Adjustments



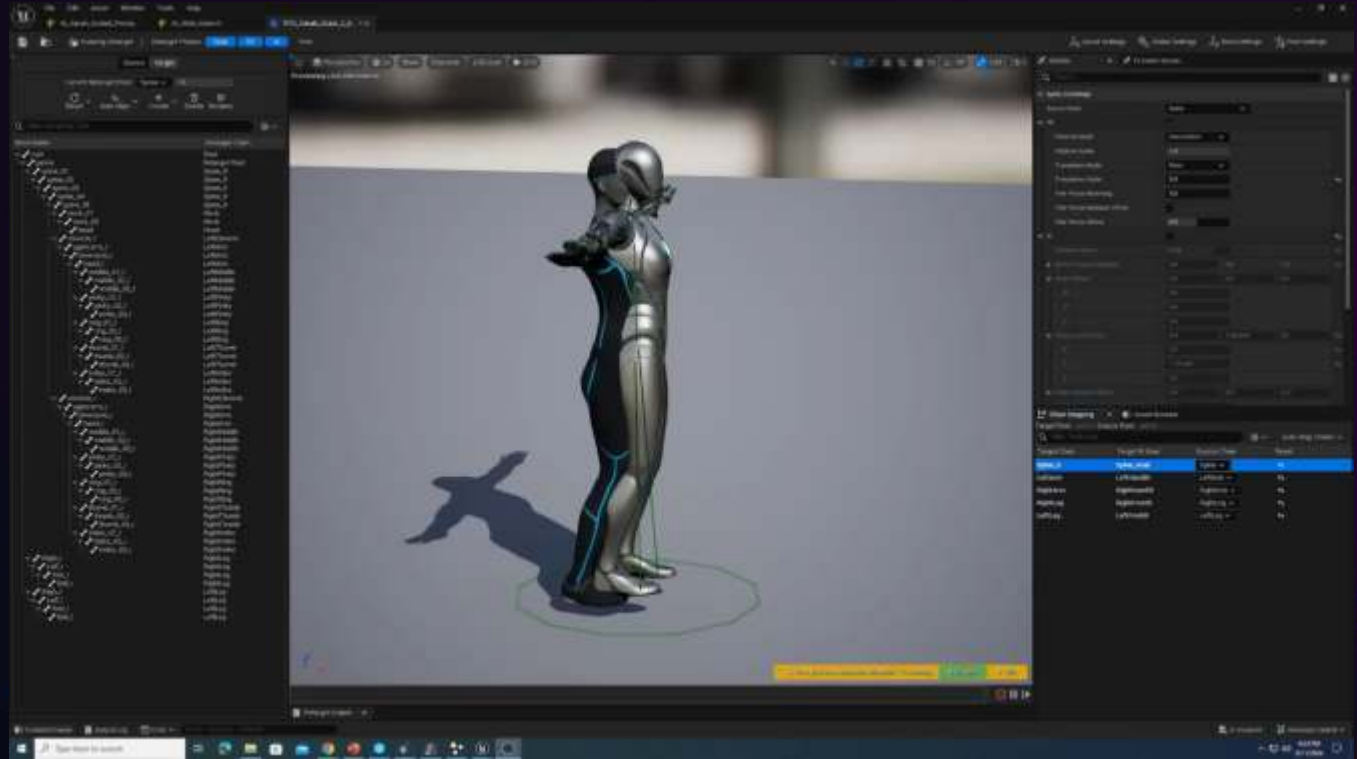
Target Character

IK Adjustments



Target Character

RTG asset
Adjustments



Target Character

RTG asset
Adjustments



Target Character

RTG asset
Adjustment
and
Animation
Preview



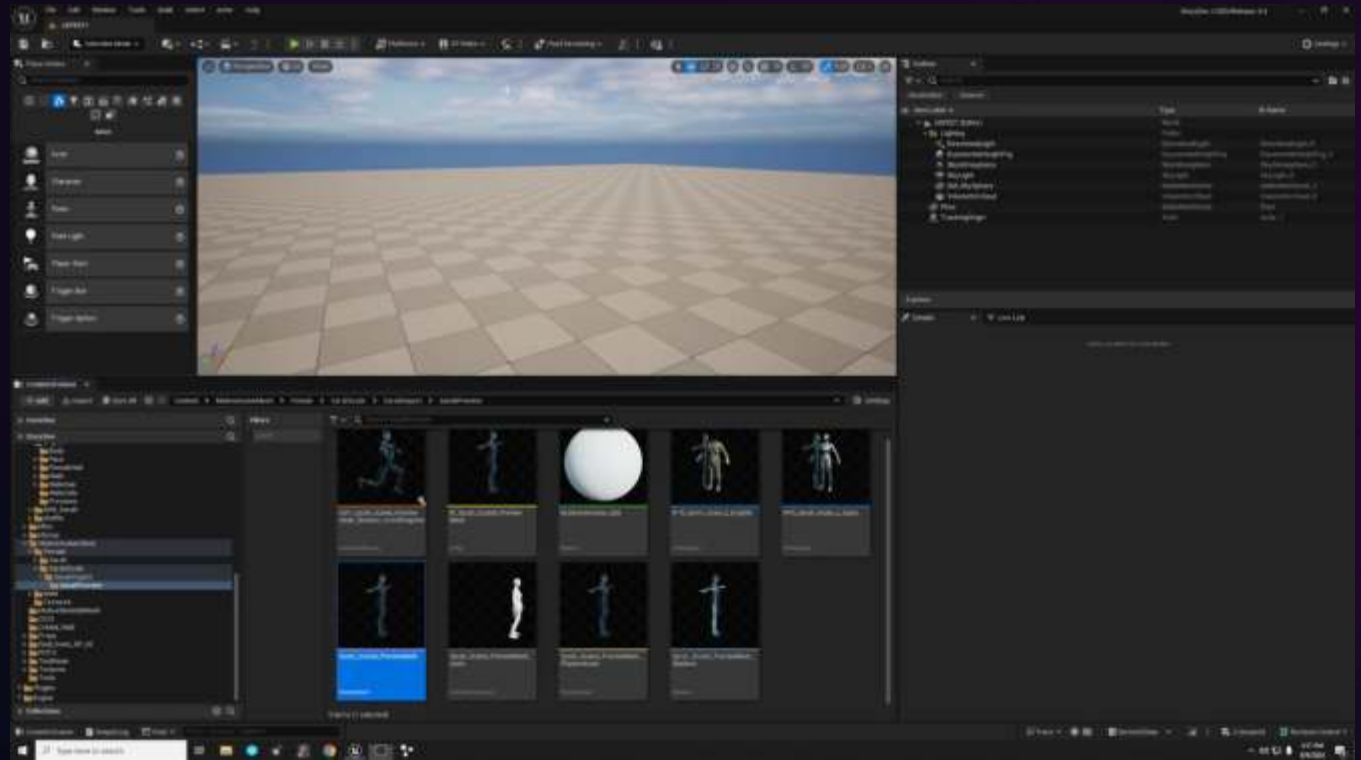
Target Character

RTG asset
Adjustment
and
Animation
Preview



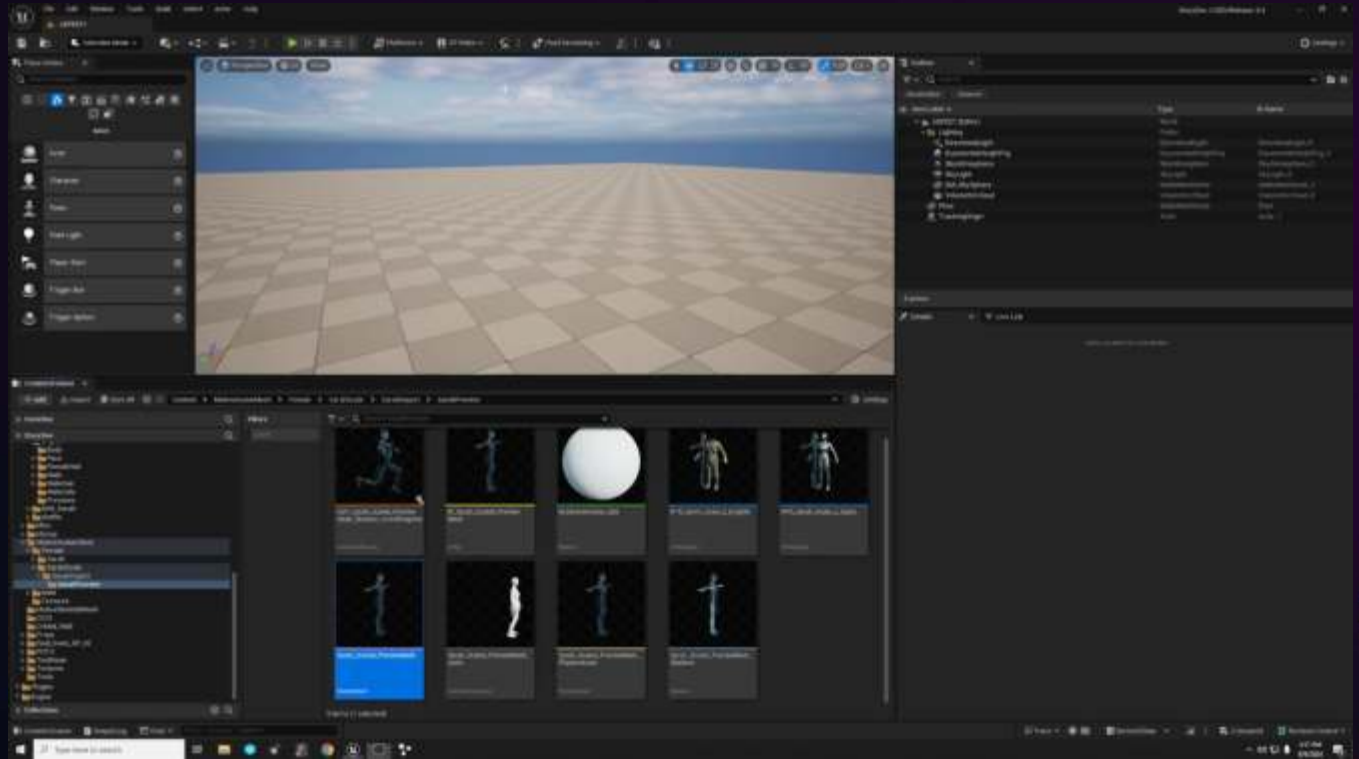
Source and
Target

Setup in
Editor



Source and
Target

Setup in
Editor

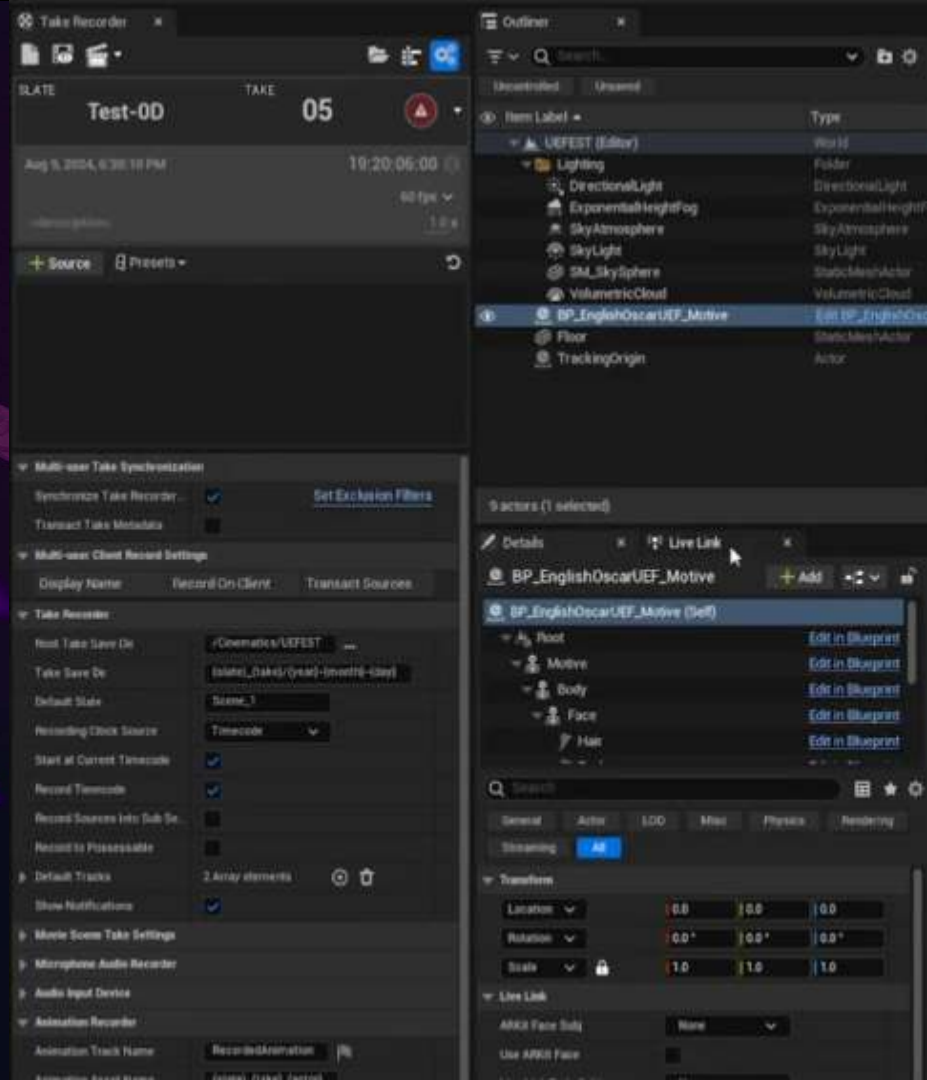


Take Recorder

Record motions for use later.

Record to source or retargeted character

Timecode – external or internal



Take Recorder



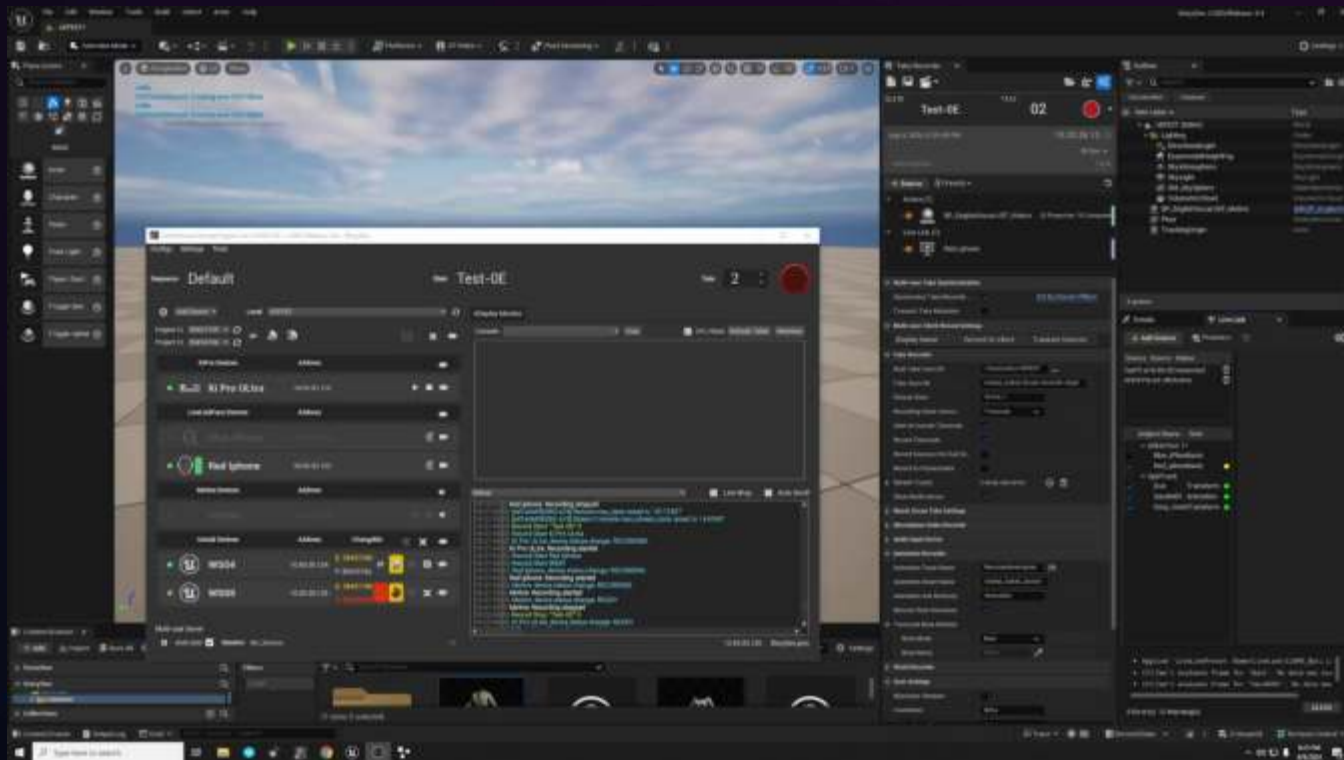
Take Recorder



Take Recorder



Switchboard



Take Recorder



Switchboard



LiveLink Hub

What is LiveLink Hub?

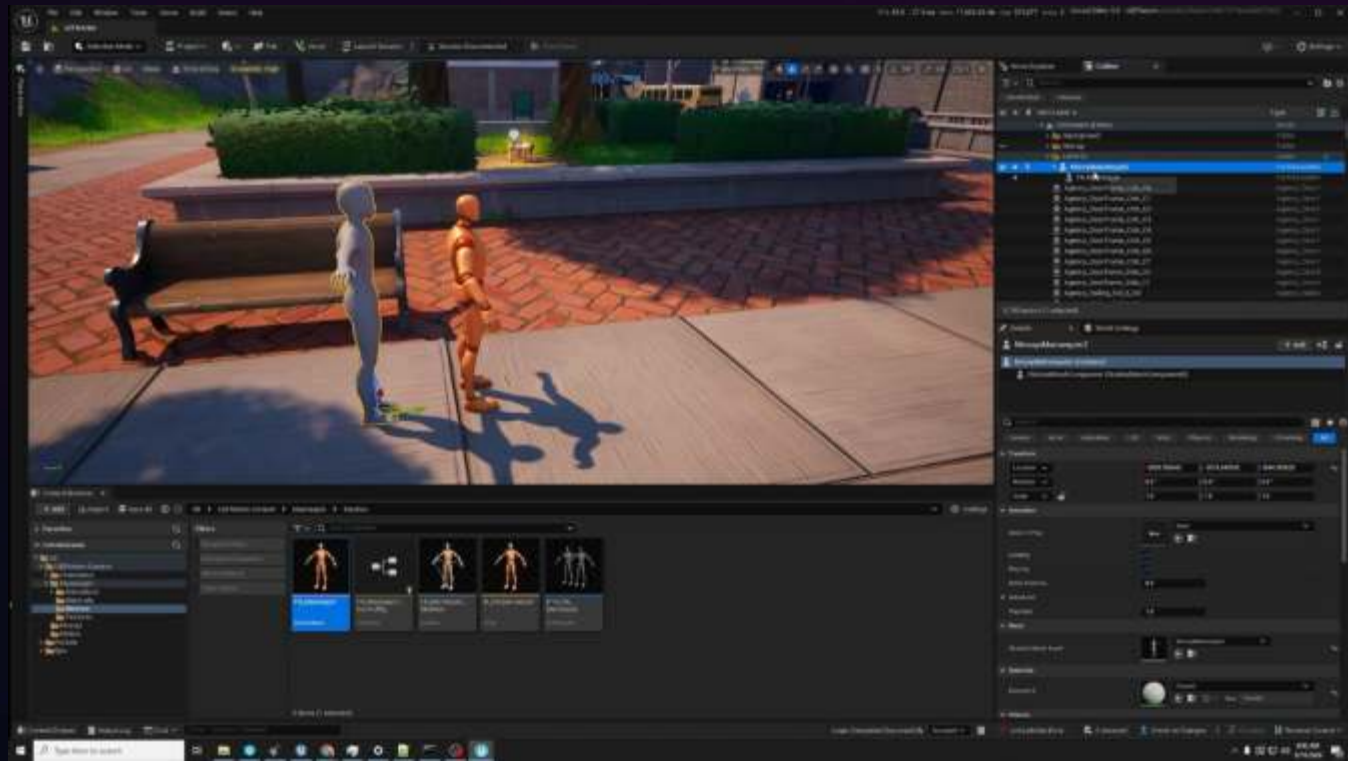
A Standalone executable that can gather your animation sources and then broadcast to your UE session(s)

Blueprint and Plugins are not useable directly in UEFN

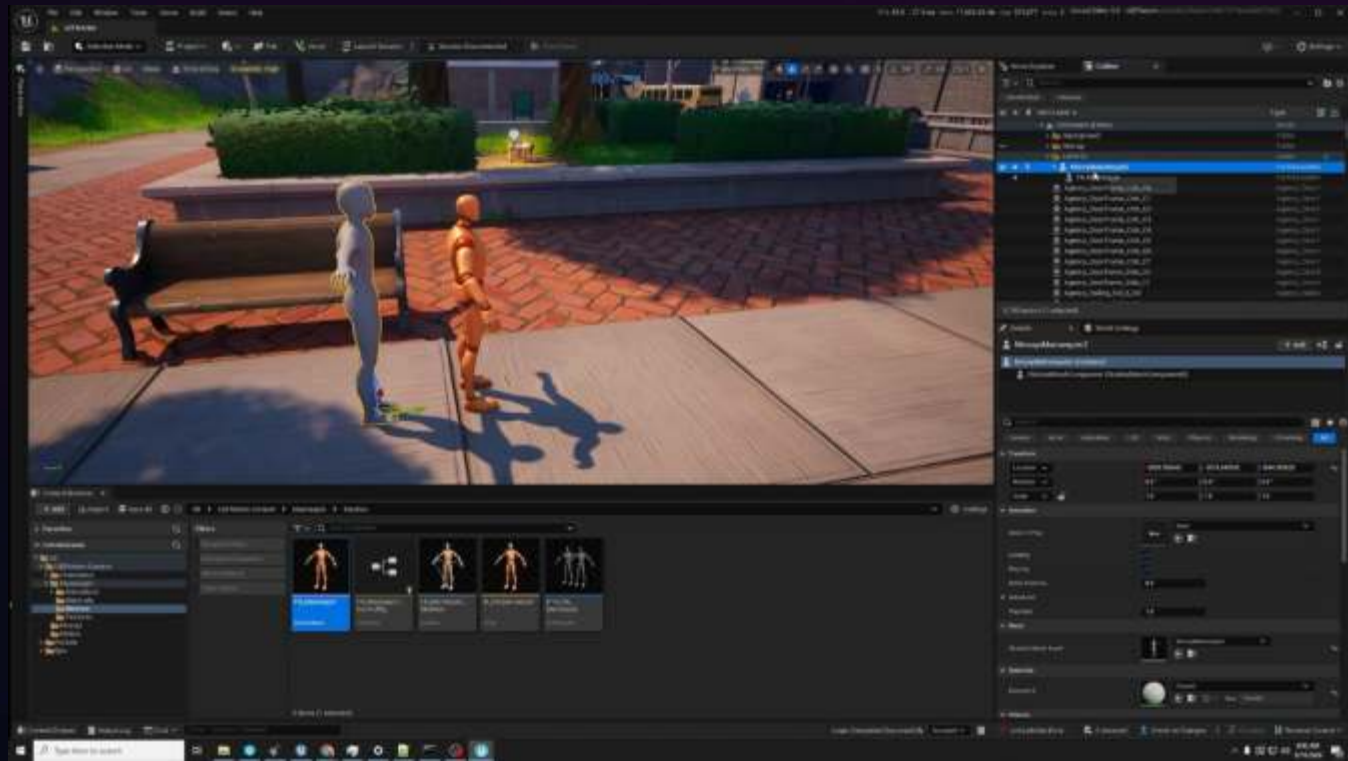
Enables a single source o for multiple LiveLink data streams



Live Link Hub and UEFN



Live Link Hub and UEFN



Fortnite Animation 101 template



UEFN Live Link Hub Walkthrough



Summary

- Capture Systems
- Real time Visualization
- Live Link and Live Link Hub
- Setup of source actor and target character assets
- Asset optimization
- Recording performance capture
- Switchboard
- Streaming to UEFN



Thank you!

For Attending

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Q&A