



HOLOLIGHT

STREAM

RELEASE NOTES

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Hololight Stream

NOTE

Documentation for all features, including upgrade guides, are available in the “Docs” folder in the Hololight Stream package. Most features also come with examples for how to use the feature in a project. To import an example, import the “Hololight Stream Examples” package into your Unity project and load from the “Samples” section in the “Package Manager” window. Unity will then copy the example into the “Assets” folder.

New features and improvements

New clients

There are now two additional clients supporting two more device types.

Lenovo VRX client	The new Lenovo VRX client features basic streaming, controller input, and controller haptics.
Windows client	The new Windows client allows for streaming to a computer running Windows. The Windows client simulates head pose movement, controller tracking, and hand tracking.

Controller haptics

The new haptics API enables haptic feedback through Hololight Stream so long as the feedback is set up in your application. It works with any Hololight Stream client that provides haptic feedback to the user. Haptic feedback is available for:

- Meta Quest 2/Pro/3
- Magic Leap 2
- Lenovo VRX

Eye-gaze-based interaction

When you activate eye-gaze-based interaction, you can control an application with your eyes. This is available for implementation on the following devices:

- HoloLens 2
- Meta Quest Pro
- Magic Leap 2

Hologlight Stream also supports eye tracking in combination with the Mixed Reality Toolkit.

DirectX 12 support

Hologlight Stream now supports DirectX 12. To use DirectX 12 in Unity, set it as the supported graphics backend in the Unity "Project Settings".

The minimum Unity version to officially support DirectX 12 is 2022.2.0a17.

NVIDIA RTX support

With the option to use DirectX 12, you can also use real-time ray tracing for photorealistic 3D graphics. To enable ray tracing-based rendering or to upgrade an existing project to use it, follow [Unity's upgrade guide](#).

Mixed Reality Toolkit 3 support

Hologlight Stream now has a new package for Mixed Reality Toolkit 3 (MRTK3). The integration is handled via the Unity Package Manager.

We added a guide for upgrading Hologlight Stream from MRTK2 to MRTK3 in our documentation.

DNS connection

It is now possible to set up a DNS and use a domain name instead of entering specific IP addresses. Once set up, a DNS connection is possible with all HoloLight Stream clients.

Hologram Stability

With the newly added head pose estimation, we've minimized the effects of latency resulting in more stable XR content when the client device is in motion.

Known issues and workarounds

- Issues can arise when upgrading a project to the newest version of HoloLight Stream. We cover this process in more detail in the documentation. Please read this documentation before upgrading any existing project to the new version.
- Color banding in linear color space can occur with Unity's High Definition Render Pipeline (HDRP).
- When using passthrough mode, black outlines appear around objects. Also, transparencies only render as completely transparent or fully opaque in passthrough mode
- When using the desktop client, screen tearing can occur when using monitors with a frequency of more than 60 Hz.
- NVIDIA RTX can cause visual problems when using single-pass instanced rendering. These problems do not occur with multi-pass instanced rendering.

SDK requirements

DirectX version	<ul style="list-style-type: none"> ▪ 11 ▪ 12
Unity version	2021.3.x or later
Supported Mixed Reality Toolkit versions	<ul style="list-style-type: none"> ▪ 2.8.x ▪ 3
Supported client devices	<ul style="list-style-type: none"> ▪ HoloLens 2 ▪ iPhone and iPad ▪ Lenovo VRX ▪ Magic Leap 2 ▪ Meta Quest 2 ▪ Meta Quest Pro ▪ Meta Quest 3 ▪ Windows PC

Stream application requirements

Server machine requirements

	Minimum	Recommended
Operating system	<ul style="list-style-type: none"> ▪ Windows 10 (10.0..17763 Build) ▪ Windows 11 ▪ Windows Server 2019 	<ul style="list-style-type: none"> ▪ Windows 10 (10.0..17763 Build) ▪ Windows 11 ▪ Windows Server 2019
Memory	16 GB	64 GB
CPU	<ul style="list-style-type: none"> ▪ Intel i5 8th Gen. 6 Cores ▪ AMD Ryzen 7 3700X 	<ul style="list-style-type: none"> ▪ Intel i7 12 Gen. 12 Cores ▪ AMD Ryzen 9 3900X
GPU	<ul style="list-style-type: none"> ▪ NVIDIA GTX 1070Ti ▪ NVIDIA GRID for VMs 	<ul style="list-style-type: none"> ▪ NVIDIA RTX 3080 TI ▪ NVIDIA GRID for VMs
Storage	SSD or NVMe	SSD or NVMe

Hologlight Stream is designed for NVIDIA GPUs only. Memory usage and storage depends on the demands of the application. The requirements can also vary between different devices, depending on the resolution and target framerate.

Network Requirements

	Minimum	Recommended
Network	Wi-Fi 5Ghz	Wi-Fi 5Ghz
Bandwidth	20 Mbit	40 Mbit
Round trip time (latency)	–	max. 50 ms

The local network of the XR device must be capable of using STUN (Session Traversal Utilities for NAT) in case the rendering server is not located in the same network as the client. Another option is to set up TURN (Traversal Using Relays around NAT) servers.