Rayforge Library URP

Documentation v1.0

Overview

URP-specific library package providing shader extensions, render features, and temporal effects for Universal Render Pipeline projects. This package extends Rayforge.Core with URP-optimized rendering utilities.

Package Type: URP Rendering Library
Target Audience: Users of Rayforge Unity Assets with URP
Installation: Automatic via dependency resolution
Dependencies: Rayforge.Core

Installation

- Install via Unity Package Manager
- **Minimum Unity Version:** 6000.0.58f2
- **Requires:** Universal Render Pipeline (URP)
- **Depends on:** Rayforge.Core (installed automatically)
- This package is automatically installed as a dependency for Rayforge URP assets
- No manual setup required

Main Modules

Shader Library

- **ShaderLibrary:** URP-optimized shader functions and utilities
- **TemporalReprojection:** Advanced temporal anti-aliasing and motion effects for URP

Render Features

- **DepthPyramid:** Hierarchical depth buffer generation for screen-space effects
- Custom render features ready to integrate with URP Renderer

Resources

- **Shaders:** Optimized URP shader implementations
- Pre-configured materials and shader variants

Key Features

URP Optimized: Built specifically for Universal Render Pipeline performance characteristics

Temporal Effects: Advanced TAA and temporal reprojection systems

Depth Pyramid: Efficient hierarchical depth for SSR, SSAO, and other screen-space effects

Render Features: Drop-in render features for URP Forward Renderer

---

Module Details

Shader Library

URP-specific shader utilities including:

- Light and shadow handling optimized for URP
- Camera and depth utilities
- Post-processing helpers
- Material property access

Temporal Reprojection

Advanced temporal effects system providing:

- Temporal Anti-Aliasing (TAA)
- Motion vector generation and sampling
- History buffer management
- Jitter and reprojection utilities

Depth Pyramid

Hierarchical depth buffer system for:

- Screen-space reflections (SSR)
- Screen-space ambient occlusion (SSAO)
- Contact shadows
- Efficient depth-based effects

Render Features

Custom URP Scriptable Render Features:

- Easy integration with URP Renderer assets
- Configurable via Inspector
- Performance optimized for mobile and desktop

Component Overview

Core Components

Temporal Rendering

- Motion vector generation and history management
- Jittered camera projection for TAA
- Temporal accumulation and filtering

Depth Processing

- Multi-level depth pyramid generation
- Optimized downsampling for various effect types
- Depth-aware filtering and sampling

URP Integration

- Custom render passes compatible with URP pipeline
- Shader library extensions for URP-specific features
- Material and resource management for URP workflows

Usage Notes

Important:

- Designed as a dependency package for URP projects
- All namespaces start with `Rayforge.URP`
- Requires `Rayforge.Core` package (installed automatically)
- Only compatible with Universal Render Pipeline
- See individual asset documentation for specific integration examples
- Do not modify package contents directly - changes may be overwritten on updates

Integration

This library is automatically referenced by Rayforge URP assets. No manual integration steps are required. Simply install your desired Rayforge asset, and this package (along with Rayforge.Core) will be included as dependencies.

Setting up Render Features

1. Select your URP Renderer asset
2. Add desired Rayforge render features via "Add Renderer Feature"
3. Configure settings in the Inspector
4. Features will automatically integrate with your rendering pipeline

Support & Resources

- **Documentation:** Included with each Rayforge asset
- **Support:** info@rayforge.eu
- **Updates:** Automatically managed via Unity Package Manager
- **URP Documentation:** https://docs.unity3d.com/Packages/com.unity.render-pipelines.universal@latest

Rayforge.URP © 2026 | Version 1.0