



HOW TO PATCH VANILLA ACTORS

Prerequisites

- [Intro to actor & placeholder mods](#)

Introduction

In this guide, we'll look at actor patching.

Overview

Actor patching is a custom system for saving actor property and component modifications in the form of patches and applying them in different contexts: the editor's world, PIE sessions, and in-game. The system helps modify vanilla actors in both Zone Kit and the game without actually modifying the original asset files on a disk or recooking the map, etc.

NOTE

The following types of modifications are currently tracked by the patching system:

- Modifying an actor's or actor component's property
- Adding a new actor component
- Removal of an existing actor component

Here are the main principles of how the patch application system works:

1. In Zone Kit, the patch generation and application mechanisms are active only when a mod is currently selected.

2. Actors from Level Instances can be patched as well, but the corresponding Level Instance has to be enabled for editing first.
3. Upon saving the current level or individual actors, the system goes through all actors that are currently being saved, filters only the changed ones, and then compares them with the corresponding actor files on the hard drive.
4. The comparison is performed component-by-component and property-by-property.
5. Based on the comparison, actor patches are generated and written to a corresponding Mod Actor Patches Data Asset. No actual changes are written to the original vanilla files on disk.
6. The asset is generated automatically if the system doesn't detect an existing instance, which is loaded automatically when a mod is selected.
7. The generated asset is packaged into the mod and processed by the game at runtime.

NOTE

In Zone Kit, actors are automatically

- Patched
 - When a mod is selected
 - When a World Partition Region is loaded
- Reset to the original state
 - When a mod is deselected

Patching vs other systems

- Only vanilla actors can be patched. Patches are not generated or applied to new modded actors.
- When a patch is generated for an actor, the actor is no longer marked for deletion, and the corresponding actor deletion data is deleted from the Mod Actor Deletions Data Asset.
- Placeholder actors can be patched, but the patches can be applied to them only in the editor's world, not in a PIE session or in-game. This is still useful because it allows saving their changes to placeholders in the form of a patch and resuming the work later.

Example workflow

Let's create a simple mod that patches an actor from the game.

WARNING

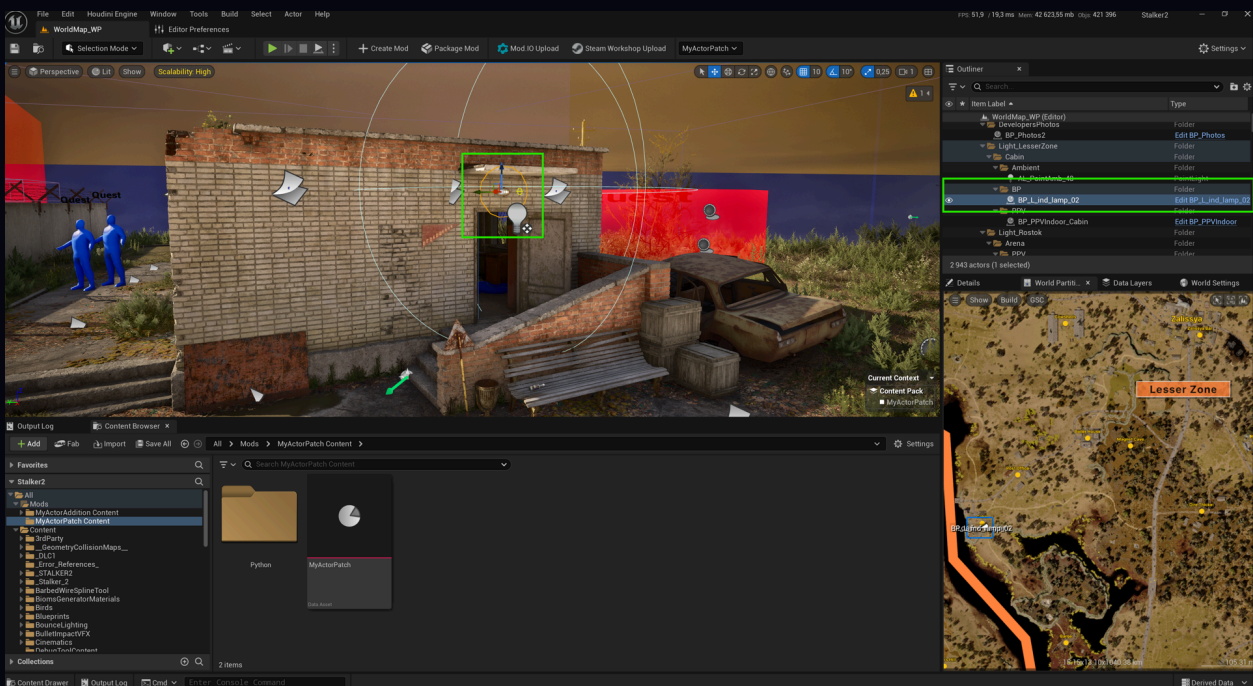
This tutorial focuses on the specifics of actor patching. If you need a refresher, the basics of working with actors in Zone Kit are covered in the [How to add new actors](#) guide.

1. Start by launching Zone Kit and creating an empty mod.

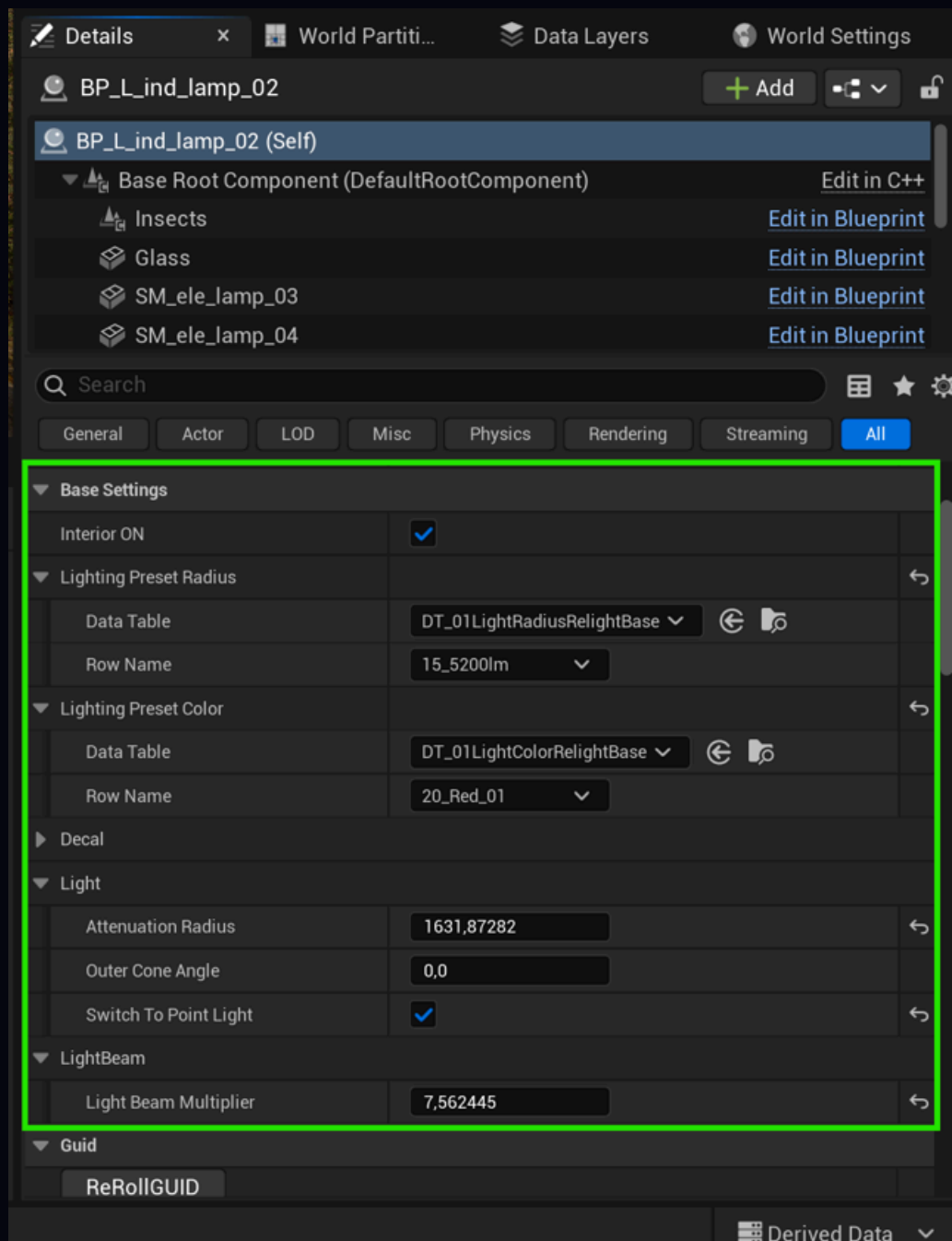
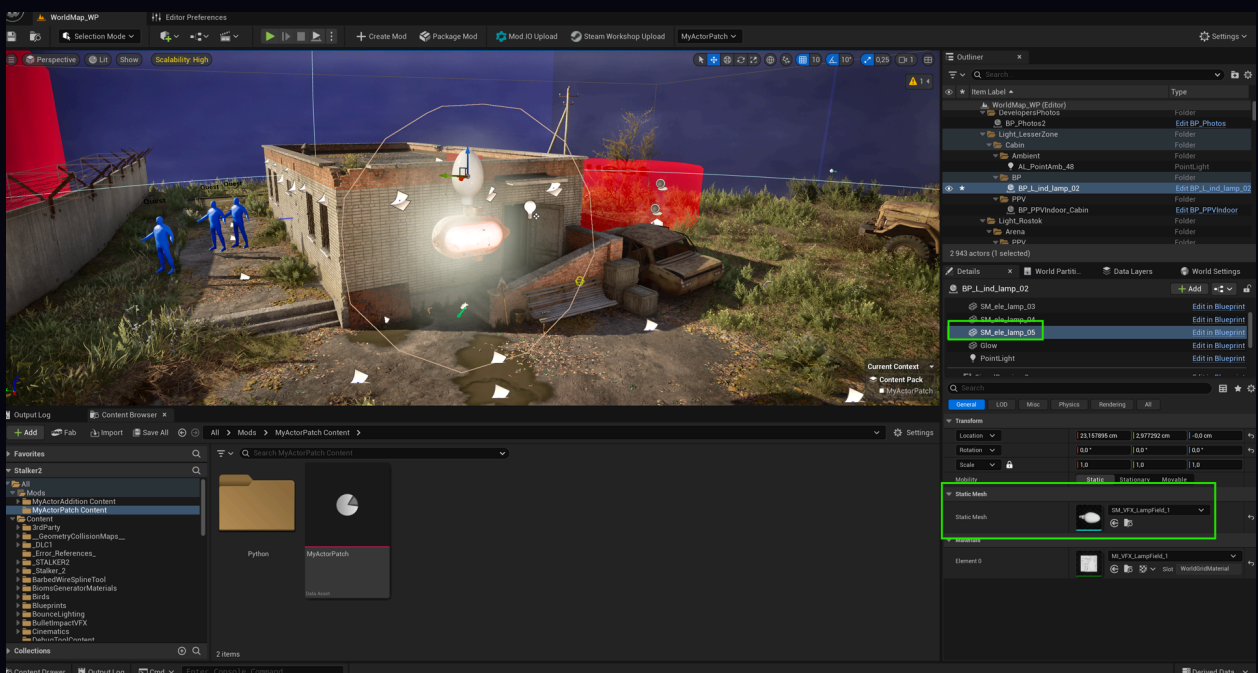
2. After the creation is finished, load a World Partition Region. We'll be using the same area around Lesser Zone → Cabin for this example:



3. Select an actor you want to patch. In our example, we'll use the lamp near the entrance to the Cabin:

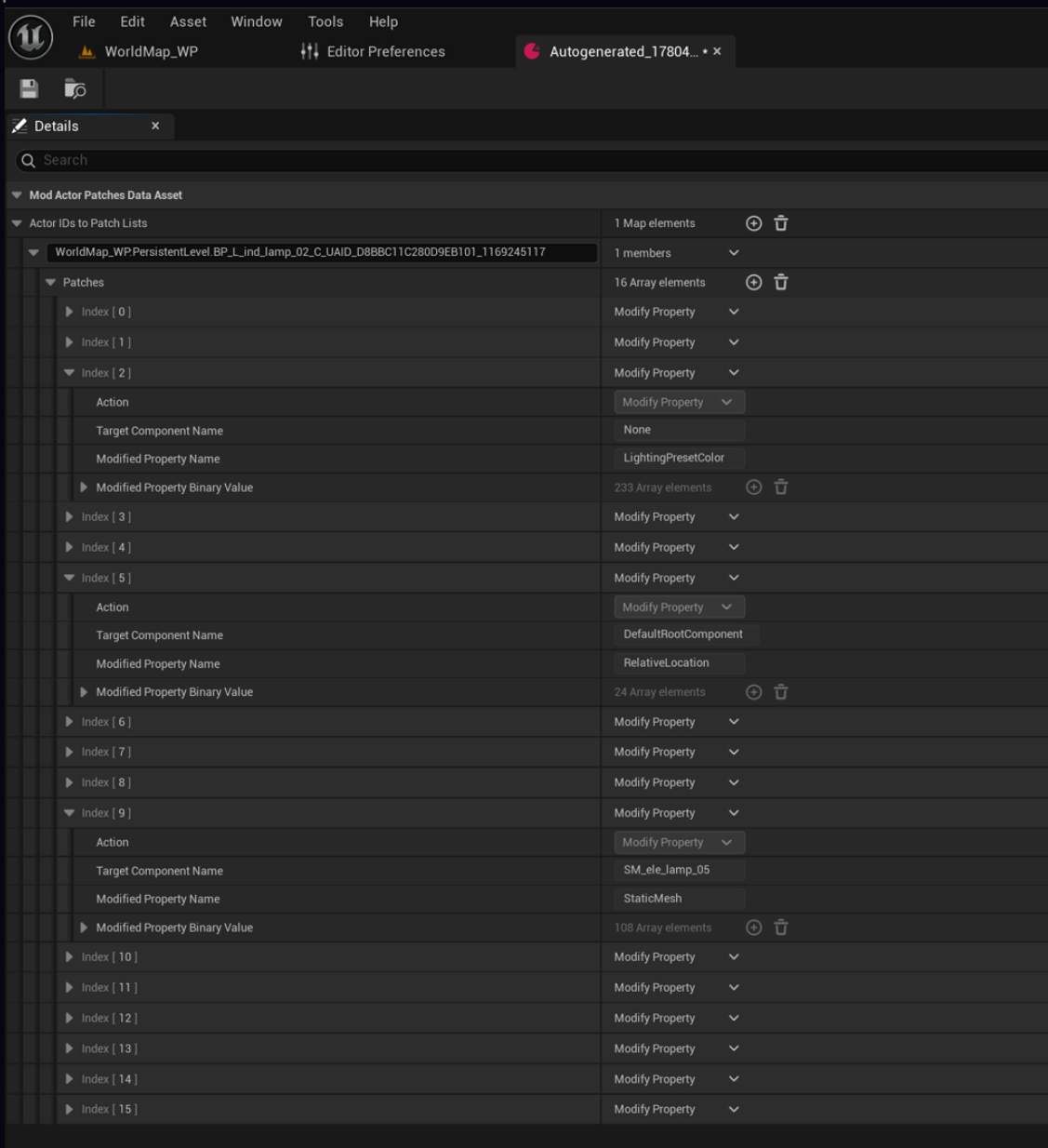


4. Modify properties of the selected actor, its components' properties, or the components hierarchy using the Details panel. In our example, we'll modify the lamp's Transform, lighting properties under the Base Settings category and select different meshes:



5. Select the Save icon in the top left corner to save the current level.

6. Observe that an asset has been automatically generated in the mod's Content directory. The asset contains the list of our modifications to the actor in the form of individual property patches:



7. Select the Save icon in the top left corner to save the generated asset.
8. Start a PIE session and observe our changes:



9. Now we can package the mod and test it in-game.