

## Building a Cleaner ESP

I'm more than just a little surprised at how easy it is to create a *dirty* mod. Little things like accidentally changing information on a global object (a light, a static, a container) while you're first getting the hang of things, can literally double the size of your mod, and impact the entire "world" of Morrowind. Not to mention, potentially, other peoples' mods... or the savegames of people to which you distribute your mod.

I'd like to make a few suggestions to ANYONE developing a mod. Before EVER releasing, you should scrutinize the following:

Save your ESP. Now go to File, Data Files, select your ESP, and hit Details. You should see a list of *everything your ESP changes when employed*. Learn to read and understand this list. Every single line of it. If you find it's tremendously long, when you've only added one internal cell with a few pieces of furniture, then your mod is **not clean**. You have three choices at that point: 1) start over, 2) hex edit your ESP to remove the improper entries (this isn't as hard as it sounds, actually), 3) release a dirty mod.

Here's a brief, no-screenshot version of a tutorial I plan on making, aimed at "Building a Cleaner ESP":

Starting from the top, you'll have a list of all the new objects you've added *or modified from the original* with your ESP. An example list:

SCPT	ds_saree_scpt_bottle
SCPT	ds_saree_scpt_winerack
ACTI	_ds_saree_vsva_winerack
MISC	_ds_saree_vsva_skey
STAT	_ds_saree_vsva_crate
CONT	barrel_01
CELL	...

The list *ends* with the first reference to a CELL.

This list should be self-explanatory, but I'll explain it anyhow. The column on the left lists the type of object. I have listed here two scripts, an activator, a miscellaneous, a static, and a container. Their names are listed to the right. Remember, these are objects *I have added or changed from the original*.

Note the funky names I've used for my objects. Pretty long and cumbersome, aren't they? But looking at the list, it's pretty easy to identify *exactly what and where* every single one of those objects is. Each object starts with my calltag, ds. This gives me my own independent namespace, apart from any other mod designer's objects, so that I should theoretically never trample over anyone else's objects. (So long as no one else uses the same convention and same calltag.)

The second part of my naming convention is the mod name. That way, two mods that I create won't trample over one another. This particular ESP is named Saree. Next, I denote the location. In this case, "vsva" stands for "Vivec, Saree Velas: Alchemist", the interior cell where those objects are located. And finally, the object's role / name itself.

The names begin with an underscore so that they sort to the top of a list. That's very handy, believe you me.

The scripts are a bit different. For one, script names apparently cannot begin with an underscore. (Bleah.) The names also can't be too long, as selecting them from the drop-down list suffers from the problem of seeing only the first twenty or so characters of the name. (Double bleah!) So I chopped out the location information (not such a big deal for scripts) and dropped the beginning underscore.

(This naming convention is a work in progress. It's a useful idea, I think, but the editor has a hard time with these names - specifically, scripts. If you want to adopt this naming convention, but you're a heavy scripter, you may encounter some problems. Try using quotes around the names of objects that use this convention.)

Getting back to my list, I see that I have:

A script, which is assigned to a special bottle.

A script, which is assigned to a winerack.

An activator, a winerack in Saree's shop.

A misc, Saree's key.

A static, a crate in Saree's shop.

A container, barrel\_01.

I know I keep saying this, but keep in mind this list *should only reflect entirely new objects you have added, or objects you have changed from the original*. Keeping this in mind, and keeping in mind the question "am I clean?" I now scrutinize this list. I ask, for each object, "New object: am I actually using this? Changed object: did I really, truly, positively mean to change this from the original?"

The scripts are new, and I am certainly using them. Ditto for the activator and key. The crate seems a little funny, so I jump off of the list, and hit Cancel on the Data Files dialogue (so as to prevent having to re-load the entire ESP). I open up the VSVA interior cell (selecting it from the list of cells) and hunt down that object from the list at the lower-right (made much easier since I have a distinguished name for it). Oh, yes, I see now - I had to make a distinguished "crate" object that a script operates upon. Scripts like objects whose "references persist", and the original static crate (furn\_crate\_open\_01) does not persist. Of course, I could have just dropped in furn\_crate\_open\_01, set it to persist, and hit that Save button on the object - but then I wouldn't have a clean ESP, since I'd have just modified 84 other crates in the original ESM!

(You scripters in the audience should also immediately recognize the fact that operating on an object almost *always* requires you have a unique name for that object. Otherwise, if you just specify "furn\_crate\_open\_01", you may end up operating on some crate halfway across Vvardenfell! If you need a script to operate on an object, you'll find you nearly always need to create your own special object for it - DO NOT simply change the name and properties of some existing object to suit your needs! That would be **dirty!**)

Okay, back to my list. One more object. The container, barrel\_01.

Ah, yes, I stuck a barrel downstairs with five gold in it.

That's fine, right?

Wrong.

This is exactly the kind of mistake the novice is bound to make, and it's the kind of thing the paranoid mod-downloader has every right to fear. When you stick objects into a container, you're not harmlessly creating just one container with the objects you want, you're *changing the contents for each and every instance of that object in the entire world*. barrel\_01 was originally empty, looked like a prime target to me. Now, I'll find that if I check the contents of any instance of barrel\_01, anywhere in the world, I'll find they *all* have five gold in them!

It gets worse.

I may realize the error of my ways, change barrel\_01 back to the way it was, and as a wiser mod builder, make my own copy of barrel\_01 (\_ds\_saree\_vsva\_barrel01), and change its contents to my heart's content.

But my mod is still *dirty*.

When I go back to my list of objects, I'll now find:

SCPT	ds_saree_scpt_bottle
SCPT	ds_saree_scpt_winerack

```
ACTI    _ds_saree_vsva_winerack
MISC    _ds_saree_vsva_skey
STAT    _ds_saree_vsva_crate
CONT    barrel_01
CONT    _ds_saree_vsva_barrel01
```

barrel\_01 is still listed, you see, and I've still "changed" it everywhere in the world. Its changes may not be any *different* than the original barrel, but picture the two following scenarios:

1. I'm playing around with objects and accidentally rename misc\_com\_bottle\_05. Oops, what I wanted was a copy of that object, not to rename the original. So I make my copy, and rename the original to its correct original name. Well, tough luck mister, your mod still contains modified reference information for **991** instances of misc\_com\_bottle\_05. The editor doesn't know well enough to understand that the changes you made "should have equaled zero", because **two wrongs don't make a right**. If you try this test, then go back to look at your "Details", you'll be astonished at all the *crap* you see on your list - changes to places you've *never even heard of*, and the size of your ESP will probably effectively double. (Although the size of the ESP probably won't bother most people. They're not that big.)
2. You think you change the object back to original, but you forget something critical. Now your mod is not only dirty, it's also harmful.

The casual, lazy mod developer is going to look at the first scenario, shrug, and say, "Yeah, but so what? It *is* back like the original, right?"

Not so for this mod developer. I'm a stickler for quality, and I managed to make a pretty dirty mod *when I was trying to be on my best behavior*. Now imagine a mod developer who doesn't really care about how he names objects, or that he might be changing references to objects in 900 other places. Suddenly, I become just a little critical of downloading anyone else's mod.

Is it safe?

Is it clean?

So, a plea to all of my fellow mod developers:

First, and probably most important, **make your own objects!** Do not modify the originals! And please, if you can spare the tiny bit of extra effort, name your objects something distinct and obvious, and keep a running list of all the new objects in your mod. (This makes debugging SO much easier!)

Second, before you ever distribute your mod, go to the Details list, and see just how clean that ESP really is! If you can account for everything on that list, then you're a-okay. But if you find you have scads and scads of objects that *aren't yours* and you thought you hadn't modified (or suddenly realize you shouldn't have!) then please, at least consider telling people in advance.